



Kindergarten Math Curriculum

Oradell Public School District
Oradell, NJ

2023

The Kindergarten Math Curriculum was developed by the Oradell Math Curriculum Team and aligned with the New Jersey Student Learning Standards (NJSLS).

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Oradell Public School District

Kindergarten Math Curriculum Committee Credits:

Jamie Caruana

Scott Duthie

Hellen Kapp

Amy Kennedy

Megan Bozios, Superintendent

Michelle Hawley, Principal

Amy Brancato, Director of Curriculum and Instruction

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Board Policy

This revision is aligned with the New Jersey Student Learning Standards for Mathematics, the New Jersey Student Learning Standards for Computer Science and Design Thinking, the New Jersey Student Learning Standards for Career Readiness, Life Literacies, and Key Skills, and the inclusion of connections to Social-Emotional Learning Competencies.

Affirmative Action

During the development of this course of study, particular attention was paid to the elimination or exclusion of any materials which might discriminate on the basis of race, color, national origin, ancestry, age, sex, affectional or sexual orientation, gender identity or expression, marital status, familial status, genetic information, mental or physical disabilities, or in educational opportunities. Every effort has been made to uphold both the letter and spirit of Affirmative Action mandates as applied to the content, the texts and the instruction inherent in this course.

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Introduction to Teaching Mathematics

For more than a decade, research studies of mathematics education in high-performing countries have concluded that mathematics education in the United States must become substantially more focused and coherent in order to improve mathematics achievement in this country. To deliver on this promise, the New Jersey Student Learning Standards (NJSLS) in Mathematics were designed to address the problem of a curriculum that is “a mile wide and an inch deep (Common Core State Standards Initiative, 2019).”

The new standards build on the best of high-quality math standards from states across the country. They also draw on the most important international models for mathematical practice, as well as research and input from numerous sources, including state departments of education, scholars, assessment developers, professional organizations, educators, parents and students, and members of the public.

The math standards provide clarity and specificity rather than broad general statements. They follow a design that not only stresses conceptual understanding of key ideas but also the organizing principles such as place value and the laws of arithmetic to structure those ideas.

In addition, the sequence of topics and performances outlined in the body of math standards respects what is known about how students learn, namely, that developing sequenced obstacles and challenges for students, absent from the insights about meaning that derive from careful study, is unwise. Therefore, the development of the standards began with research-based learning progressions detailing what is known today about how students’ mathematical knowledge, skill, and understanding develop over time. The knowledge and skills students need to be prepared for mathematics in college, career, and life are woven throughout the mathematics standards.

These standards define what students should understand and be able to do in their study of mathematics. Additionally, this curriculum is written around the Standards for Mathematical Practice. These standards describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem-solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

Teachers are required to assess understanding by asking the student to justify, in a way that is appropriate to the student’s mathematical maturity, why a particular mathematical statement is true or where a mathematical rule comes from. Mathematical understanding and procedural skill are equally important, and both are assessed by using mathematical tasks of sufficient richness. The assessments contained in this curriculum document reflect the level of rigor represented in the state-level assessments and the NJ state Model Curriculum for Math. They serve as guideposts for teachers in determining the level of preparedness

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students need to reach. This curriculum document will continue to evolve as teachers plan their lessons and gather more resources to teach the units.

All About the Mathematics Curriculum

How was the curriculum developed?

The Oradell Public School District's curriculum consists of units that have been inspired by the New Jersey Student Learning Standards — Mathematics. The main professional resource teachers use is *Go Math! by Houghton Mifflin Harcourt Publishing Company*. Teachers are encouraged to collaborate to create additional lessons and formative assessments for the whole group, small-group, and individual conferences.

Each unit contains enduring understandings and essential questions with corresponding teaching points. Enduring understandings are statements summarizing important ideas and core processes that are central to math and have lasting value beyond the classroom. They synthesize what students should understand—not just know or do—as a result of studying a particular unit. Moreover, they articulate what students should “revisit” over the course of their lifetimes in relationship to the content area. Essential questions are broad questions with many answers. They encourage transfer beyond the specific skill or topic students are studying and should recur over many years to promote curriculum coherence and real-world connections. In math, a teaching point addresses both the skill and strategy that will be practiced in a given math class. The teaching points in the math curriculum are meant to build student skills over the unit and are chosen based on the assessment of combined skills.

Modifications

The modifications section at the end of each bend is meant to help guide the differentiation of the units for students with IEPs, English Language Learners, Tier 2 At-Risk students (students in Basic Skills) and Gifted and Talented students. Carol Ann Tomlinson defines differentiation as tailoring instruction to meet individual needs. Whether teachers differentiate content, process, products, or the learning environment, the use of ongoing assessment and flexible grouping makes this a successful approach to instruction. At its most basic level, differentiation consists of the efforts of teachers to respond to variance among learners in the classroom. Whenever a teacher reaches out to an individual or small group to vary his or her teaching in order to create the best learning experience possible, that teacher is differentiating instruction (Tomlinson, 2000).

Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile:

1. Content: what the student needs to learn or how the student will get access to the information
2. Process: activities in which the student engages in order to make sense of, or master the content
3. Products: culminating projects that ask the student to rehearse, apply, and extend what he or she has learned in a unit
4. Learning environment: the way the classroom works and feels

Our Math Philosophy

We believe in a Guided Math approach to the teaching of math. We develop mathematicians to become thinkers and to develop strategies to become global citizens. We believe that students need access to

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real-world problems and experiences. We believe that students need time, choice, and feedback to be successful. Partnered with explicit instruction in mathematics content, a strategy-based curriculum promotes math behaviors and skills that contribute to strategic thinking, accurate problem solving and extending mathematical learning to new situations.

What is the Guided Math Framework?

To help teachers build capacity by expanding their repertoire of instructional strategies, many educational leaders may consider the implementation of Guided Math (Sammons, 2010 and 2013).

This framework offers a wide selection of instructional strategies from which teachers can choose - all of which engage students in challenging mathematical instruction. The flexibility of the framework permits teachers to adapt it to align with their own teaching styles and to meet the needs of their students. When implemented, Guided Math instruction may vary from week to week and from classroom to classroom (Sammons, 2013).

The components of a Guided Math approach are as follows:

- Math Warm-Ups
- Whole-Class Instruction
- Small-Group Instruction
- Math Workshop
- Math Conferences
- Assessment

Components Guided Math Workshop

Math Warm-Ups

While setting a mathematical tone for the day, Math Warm-Ups at the beginning of a day or a class period also provide valuable ongoing mathematical practice for students. Calendar board activities and Math Stretches may serve as brief Warm-Ups for students. Warm-Ups also provide opportunities for students to learn about current event connections to mathematics and to assume classroom responsibilities that reinforce mathematical skills.

Whole-Class Instruction

This more traditional instructional mode is an option for teachers to deliver mini lessons, conduct math-related read-alouds, and model mathematical thinking. Whole-Class Instruction is also valuable for Math Huddle discussions as follow-ups to Math Stretch tasks. Additionally, this format can be used for review, class mathematical games, and activating strategies. Working together in these ways is important in establishing a sense of mathematical community.

Small-Group Instruction

At the heart of the framework is Small-Group Instruction with groups in which the composition is fluid and based upon previously identified, specific instructional needs. These Small-Group lessons allow teachers to more easily differentiate instruction and to help students develop proficiency in the mathematical practices as described by the New Jersey State Learning Standards for Mathematics.

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In addition, the intimate nature of Small-Group lessons enables teachers to maximize student engagement (both hands-on and minds-on), to conduct ongoing informal formative assessment, and to closely monitor understanding while students are working. Because teachers are able to respond immediately when misconceptions are observed or move forward with greater challenges when understanding is evident, instruction is more efficient than traditional whole-class lessons. In spite of the fact that these lessons are usually much shorter in duration, greater student understanding of concepts and skills is achieved.

Math Workshop

During Math Workshop, students work independently on math workstation tasks that provide practice of previously mastered concepts and skills, promote computational fluency, or challenge students to engage in mathematical investigations. Playing math games is a common component of Math Workshop, but not the only option. Paper and pencil tasks may be included, as well as tasks that require documenting mathematical thinking in math journals. Students learn to assume responsibility for working independently during Math Workshop. This allows teachers to teach small-group lessons and conduct conferences with individual students.

Math Conferences

These one-on-one conversations between a teacher and a student are important assessment and teaching tools. Students explain their mathematical thinking related to the work at hand while teachers ask clarifying questions, assess student understanding, and determine the students' next steps in learning. Specific, targeted, and brief teaching points are delivered during these conversations. Students practice mathematical communication skills as they are encouraged to self-assess their progress toward their own mathematical learning goals.

Assessment

Essential to the Guided Math framework is balanced and timely assessment, especially formative assessment. Knowing students' learning needs allows teachers to plan lessons so that students receive "just right" instruction. That may require instruction that fills gaps in knowledge and skills for some students or provides additional challenges for others. Only by knowing specific needs when learning is occurring can teachers maximize their effectiveness.

Suggested Pacing Guide for Math Kindergarten

Unit	Approximate Months	Unit	Skills
1	2 Months Sept-Oct	Numbers 0-5	Represent, Count, and Write Numbers 0-5 Compare Numbers to 5
2	2 Months Nov-Dec	Numbers 6-10	Represent, Count, and Write Numbers 6-9 Represent and Compare Numbers to 10
3	1 Month Jan	Geometry	Identify and Describe Two-Dimensional Shapes Identify and Describe Three-Dimensional Shapes
4	2 Months Feb-Mar	Addition and Subtraction	Addition Subtraction
5	2 Months Apr-May	Numbers 11-20	Represent, Count, and Write 11 to 19 Represent, Count, and Write 20 and Beyond
6	1 Month June	Measurement and Data	Measurement Classify and Sort Data

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Unit 1: Numbers 0-5

Refer to Go Math! Chapters 1-2

Unit Overview

In this unit, students will conceptualize the value of a number by first making models and connecting the number name and its symbol to the model. They will use counters, connecting cubes, the five frame, and classroom objects to model numbers. Students will also use one-to-one correspondence to identify sets with the same number, more, or fewer and connect counting to symbols and to accurate representations.

Enduring Understandings

- What are numbers?
- What number name can be given to a set of objects?
- How are numbers named and quantities related?

Essential Questions

- There is a unique symbol that goes with each number.
- There is a specific order to the set of whole numbers.
- Our number system (the Base Ten numeration system) uses the symbols 0-9 and place value to build all our numbers.

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferring• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores
Benchmark Assessments
<ul style="list-style-type: none">• Go Math Gr. K Beginning of the Year Assessment
Alternative Assessments

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- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Counting and Cardinality K. CC

A. Know number names and the count sequence.

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).

B. Count to tell the number of objects.

4. Understand the relationship between numbers and quantities; connect counting to cardinality.

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.

b. Understand that the last number name said 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.

c. Understand that each successive number name refers to a quantity that is one larger.

C. Compare numbers.

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.1

Operations and Algebraic Thinking K.OA

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

3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

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

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

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

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

PRACTICES

CLKSP4 Demonstrate creativity and innovation.

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CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.K.1** With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how)

Speaking & Listening

- **SL.K.6** Speak audibly and express thoughts, feelings, and ideas clearly.

Science

- **K-LS1-1** Use observations to describe patterns of what plants and animals (including humans) need to survive. -*Shape Patterns*

Standards for Mathematical Practice

MP.1 Make sense of problems and persevere in solving them.
MP.2 Reason abstractly and quantitatively.
MP.3 Construct viable arguments & critique the reasoning of others.
MP.4 Model with mathematics.
MP.5 Use appropriate tools strategically
MP.6 Attend to precision.
MP.7 Look for and make use of structure.
MP.8 Look for and express regularity in repeated reasoning.

Unit 1:

Suggested Teaching Points

Represent, Count, and Write Numbers 0 to 5

Students will...

- Model and count 1 and 2 with objects.
- Represent 1 and 2 objects with number names and written numerals.
- Model and count 3 and 4 with objects.
- Represent 3 and 4 objects with number names and written numerals.
- Model and count up to 5 with objects.
- Represent up to 5 objects with a number name and a written numeral.

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- Use objects or drawings to decompose 5 into pairs in more than one way.
- Know that each successive number refers to a quantity that is one larger.
- Solve problems by using the strategy to make a model.
- Represent 0 objects with a number name and a written numeral.
- Learn how to log into Dreambox and navigate between the different games and lessons.

Compare Numbers to 5

Students will...

- Use matching and counting strategies to compare sets with the same number of objects.
- Use matching and counting strategies to compare sets when the number of objects in one set is greater than the number of objects in the other set.
- Use matching and counting strategies to compare sets when the number of objects in one set is less than the number of objects in the other set.
- Make a model to solve problems using a matching strategy.
- Use a counting strategy to compare sets of objects.

Unit Specific Vocabulary

One
Two
Match
Three
Four
Five
Pairs
And

Larger
Zero
Fewer
More
Same number
Compare
Greater
Less

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math K* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters

Supplemental Materials:

- Digital Resources:
 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade K - eGlossary](#)
 - DreamBox

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [Making a Ten - BrainPop Jr.](#)
- [Basic Adding - BrainPop Jr.](#)
- [Basic Subtraction - BrainPop Jr.](#)

English Language Learners

- [Grade K - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.

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- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans:

- *Reteach* lesson
- Modification of journal pages.
- Use of manipulatives, counters and number grid, and vocabulary picture cards.
- Quick Look Cards to provide experience decomposing numbers.
- Have children use craft sticks to represent and solve problems.
- Extended time & think time
- Prompting
- Reassurance
- Preferential seating
- Repeated directions
- Behavior chart to increase focus and work completion
- Sensory breaks with timers

Social-Emotional Learning Competencies

- **Self-Awareness:** ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management:** ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness:** ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how

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one's actions influence and are influenced by others

- Connections:
 - Students collaborate and help each other during math centers

- **Relationship Skills:** refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups

- **Responsible Decision-Making:** refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

K Grade Math Curriculum

Unit 2: Numbers 6-10

Refer to Go Math! Chapters 3-4

Unit Overview

In this unit, students will build on their understanding of numbers from 0 to 5 to conceptualize the numbers 6 to 10. They will demonstrate their knowledge of numbers from 6 to 9 by counting and determining how many, linking the number of objects in a set to the symbol and word in oral and written form, recognizing a number symbol and creating sets that correspond to that number, making sense of what a number means in terms of size or quantity, understanding the relative position of a number, i.e., after 6 comes 7.

Enduring Understandings

- If you compare two groups of objects and the number of objects match, then the objects have the same number. If you compare two groups of objects and one group has items that are left over, that group has more. The other group has fewer.
- In a pair of numbers, the number that shows more is “greater”, and the number that shows fewer is “less”.
- “1 more than”, “1 less than”, “2 more than”, “2 less than”, etc., expresses a relationship between two numbers.

Essential Questions

- How are numbers named and quantities related?
- How can the numbers from 6-10 be compared and ordered?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">● Teacher Observation● Student Participation● One-to-One Conferring● Small Strategy Groups● LinkIt! Progress Reports● DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">● Chapter Quizzes & Tests● Student Self-Reflection by Chapter● Chapter Performance Tasks (as appropriate)● Online Math Activity Scores
Alternative Assessments

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- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Counting and Cardinality K.CC

A. Know number names and the count sequence.

- Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
- 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).

B. Count to tell the number of objects.

- 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.

C. Compare numbers.

- 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.1
- Compare two numbers between 1 and 10 presented as written numerals.

Operations and Algebraic Thinking K.OA

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

- Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
- 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.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)
- 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

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PRACTICES

- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.K.1** With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how)

Writing

- **W.K.5** With guidance and support from adults, strengthen writing through response and self-reflection using questions and suggestions from peers.

Speaking & Listening

- **SL.K.6** Speak audibly and express thoughts, feelings, and ideas clearly.

Standards for Mathematical Practice

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments & critique the reasoning of others.

MP.4 Model with mathematics.

MP.5 Use appropriate tools strategically

MP.6 Attend to precision.

MP.7 Look for and make use of structure.

MP.8 Look for and express regularity in repeated reasoning.

Unit 2: Numbers 6-10

Suggested Teaching Points

Represent, Count, and Write Numbers 6-9

Students will...

- Model and count 6 with objects.
- Represent up to 6 objects with a number name and a written numeral.
- Model and count 7 with objects.
- Represent up to 7 objects with a number name and a written numeral.
- Model and count 8 with objects.
- Represent up to 8 objects with a number name and a written numeral.
- Model and count 9 with objects.
- Represent up to 9 objects with a number name and a written numeral.
- Solve problems by using the strategy to draw a picture.

Represent and Compare Numbers to 10

Students will...

- Model and count 10 with objects.
- Represent up to 10 objects with a number name and a written numeral.
- Use a drawing to make 10 from a given number.
- Count forward to 10 from a given number.
- Solve problems by using the strategy to make a model.
- Use counting strategies to compare sets of objects.
- Compare two numbers between 1 and 10.

Unit Specific Vocabulary

Six
Match
Seven
Eight
Nine
Ten
Compare
Greater
Less

And
Pairs
One
Two
Three
Four
Five
Six

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math K* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters

Supplemental Materials:

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 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade K - eGlossary](#)
 - DreamBox

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [Making a Ten - BrainPop Jr.](#)
- [Basic Adding - BrainPop Jr.](#)
- [Basic Subtraction - BrainPop Jr.](#)

English Language Learners

- [Grade K - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.

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- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans:

- *Reteach* lesson
- Modification of journal pages.
- Use of manipulatives, counters and number grid, and vocabulary picture cards.
- Quick Look Cards to provide experience decomposing numbers.
- Have children use craft sticks to represent and solve problems.
- Extended time & think time
- Prompting
- Reassurance
- Preferential seating
- Repeated directions
- Behavior chart to increase focus and work completion
- Sensory breaks with timers

Social-Emotional Learning Competencies

- **Self-Awareness:** ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management:** ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness:** ability to take the perspective of others, demonstrate empathy,

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acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others

- Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills:** refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making:** refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

K Grade Math Curriculum

Unit 3: Geometry

Refer to Go Math! Chapters 9-10

Unit Overview

In this unit, students will study two-dimensional shapes to develop their spatial sense. They will develop language to help classify and describe objects and use mathematical terms to describe shapes. Students will also have opportunities to identify and describe attributes of three-dimensional shapes.

Enduring Understandings

- Attributes such as size, color, shape or number can be used to classify and sort objects into different categories.
- Attributes such as size, color, or shape can be used to sort the same set of objects in different ways.
- A set of objects can be sorted according to a combination of attributes.
- Two-dimensional “flat” figures can have straight sides or rounded curves.
- Three-dimensional figures are solid and have length, width and height.

Essential Questions

- How can objects be classified and sorted?
- What attributes can be used to sort objects into given categories?
- What is the difference between “flat” (two-dimensional) shapes and “solid” (three-dimensional) shapes?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferencing• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores• Create a map for Our Community (STEAM Project)
Benchmark Assessments
<ul style="list-style-type: none">• Go Math Gr. K Middle of the Year Assessment
Alternative Assessments

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- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Geometry K.G

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

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, behind, and next to.
2. Correctly name shapes regardless of their orientations or overall size.
3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

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

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).
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
6. Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- 8.2.2.NT.2: Brainstorm how to build a product, improve a designed product, fix a product that has stopped working, or solve a simple problem.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

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

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

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

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

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Reading

- **RI.K.1** With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how)

Speaking & Listening

- **SL.K.6** Speak audibly and express thoughts, feelings, and ideas clearly.

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
MP.2 Reason abstractly and quantitatively.
MP.3 Construct viable arguments & critique the reasoning of others.
MP.4 Model with mathematics.
MP.5 Use appropriate tools strategically
MP.6 Attend to precision.
MP.7 Look for and make use of structure.
MP.8 Look for and express regularity in repeated reasoning.

Unit 3: Geometry**Suggested Teaching Points****Identify and Describe Two-Dimensional Shapes****Students will...**

- Identify and name two-dimensional shapes including circles.
- Describe attributes of circles.
- Identify and name two-dimensional shapes including squares.
- Describe attributes of squares.
- Identify and name two-dimensional shapes including triangles.
- Describe attributes of triangles.
- Identify and name two-dimensional shapes including rectangles.
- Describe attributes of rectangles.
- Identify and name two-dimensional shapes including hexagons.
- Describe attributes of hexagons.
- Use the words alike and different to compare two-dimensional shapes by attributes.
- Solve problems by using the strategy to draw a picture.

Identify and Describe Three-Dimensional Shapes**Students will...**

- Analyze and compare three-dimensional shapes by attributes.
- Identify, name, and describe three-dimensional shapes including spheres.
- Identify, name, and describe three-dimensional shapes including cubes.
- Identify, name, and describe three-dimensional shapes including cylinders.
- Identify, name, and describe three-dimensional shapes including cones.
- Solve problems by using the strategy use logical reasoning.
- Model two- and three-dimensional shapes by building and drawing.
- Use the terms above and below to describe shapes in the environment.

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- Use the terms beside and next to to describe shapes in the environment.
- Use the terms in front of and behind to describe shapes in the environment.

Unit Specific Vocabulary

Circle	Different	Hexagon
Two-Dimensional Shapes	Flat surface	Alike
Curve	Curved surface	Cone
Corners	Roll	Flat
Sides	Stack	Sold
Square	Slide	Above
Vertex	Sphere	Below
Vertices	Three-dimensional shapes	Beside
Sides of equal length	Curved surface	Next to
Triangle	Cube	In front of
Rectangle	Cylinder	Behind

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math K* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters

Supplemental Materials:

- Digital Resources:
 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade K - eGlossary](#)
 - DreamBox
- [STEAM Integration: Unit 2- Our Community](#)

Special Education Students

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- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
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- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
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- [Basic Adding - BrainPop Jr.](#)
- [Basic Subtraction - BrainPop Jr.](#)

English Language Learners

- [Grade K - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
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- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.

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- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans:

- *Reteach* lesson
- Modification of journal pages.
- Use of manipulatives, counters and number grid, and vocabulary picture cards.
- Quick Look Cards to provide experience decomposing numbers.
- Have children use craft sticks to represent and solve problems.
- Extended time & think time
- Prompting
- Reassurance
- Preferential seating
- Repeated directions
- Behavior chart to increase focus and work completion
- Sensory breaks with timers

Social-Emotional Learning Competencies

- **Self-Awareness**: ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers

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- **Relationship Skills:** refers to one’s ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups

- **Responsible Decision-Making:** refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

K Grade Math Curriculum

Unit 4: Addition and Subtraction

Refer to Go Math! Chapters 5-6

Unit Overview

In this unit, students will explore addition through situations that require a joining action. They will use pictures of two sets to record the addition sentence using both symbols and words. They will also create their own problems and record the number sentences. This activity helps to evaluate their understanding of addition and their ability to correctly record a number sentence.

Students will also explore subtraction through situations that involve the action of taking away. They will use problem situations, pictures, and models. The students will model and solve in a variety of contexts that support subtraction situations. There are three different structures of subtraction situations that involve action: the result is unknown, the change is unknown, or the start is unknown.

Enduring Understandings

- There are many strategies for adding and subtracting numbers.
- Addition and subtraction are related to each other.
- Addition can be used when we know the parts and need to find the whole (total).
- Subtraction can be used when we know the total and need to find an unknown addend.
- Visual models can help us solve real life problems.

Essential Questions

- Why do I need to add?
- Why do I need to subtract?
- How can you use objects and drawings to solve addition and subtraction problems?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferring• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores

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Alternative Assessments

- Modified Unit Assessments
- Modified Chapter Assessments

Standards (NJSLs) Addressed in this Unit

Operations and Algebraic Thinking K.OA

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

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.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
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.
5. Demonstrate fluency for addition and subtraction within 5.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a)
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- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

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Reading

- **RI.K.1** With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how)

Speaking & Listening

- **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.

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments & critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

Unit 4: Addition and Subtraction

Suggested Teaching Points

Addition

Students will...

- Use expressions to represent addition within 5.
- Use expressions to represent addition.
- Solve problems by using the strategy act it out.
- Use objects and drawings to solve addition word problems within 5.
- Use a drawing to find 10 from a given number and record the equation.
- Solve addition word problems within 5 and record the equation.
- Solve addition word problems within 10 and record the equation.
- Decompose numbers within 5 into pairs in more than one way and record each decomposition with an equation.
- Decompose 6 and 7 into pairs in more than one way and record each decomposition with an equation.
- Decompose 8 into pairs in more than one way and record each decomposition with an equation.
- Decompose 9 into pairs in more than one way and record each decomposition with an equation.
- Decompose 10 into pairs in more than one way and record each decomposition with an equation.

Subtraction

Students will...

- Use expressions to represent subtraction within 5.
- Use expressions to represent subtraction.
- Solve problems by using the strategy act it out.
- Use objects and drawings to solve subtraction word problems within 5.
- Solve subtraction word problems within 5 and record the equation.

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- Solve subtraction word problems within 10 and record the equation.
- Understand addition as putting together or adding to and subtraction as taking apart or taking from to solve word problems.

Unit Specific Vocabulary

Add
Plus
Is Equal To
One
Two
Three
Four
Five
Pair

Six
Seven
Eight
Nine
Ten
Subtract
Minus

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

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Supplemental Materials:

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 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade K - eGlossary](#)
 - DreamBox

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.

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- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [Making a Ten - BrainPop Jr.](#)
- [Basic Adding - BrainPop Jr.](#)
- [Basic Subtraction - BrainPop Jr.](#)

English Language Learners

- [Grade K - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans:

- *Reteach* lesson
- Modification of journal pages.
- Use of manipulatives, counters and number grid, and vocabulary picture cards.
- Quick Look Cards to provide experience decomposing numbers.
- Have children use craft sticks to represent and solve problems.
- Extended time & think time
- Prompting
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- Behavior chart to increase focus and work completion
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Social-Emotional Learning Competencies

- **Self-Awareness**: ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills**: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making**: refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

K Grade Math Curriculum

Unit 5: Numbers 11-20 and Beyond

Refer to Go Math! Chapters 7-8

Unit Overview

In this unit, students will build on their understanding of numbers from 0 to 10 to conceptualize the numbers 11 to 19 and beyond. They will practice the numbers 11 to 19, expressing each number as the sum of 10 and more, and recording the number words. They will also build their understanding of place value.

Enduring Understandings

- Ten ones can be grouped to make one ten.
- Two digit numbers are made up of groups of tens and ones.

Essential Questions

- How can we model and represent two digit numbers?
- How does the placement of a digit in a number affect its value?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferencing• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores
Alternative Assessments
<ul style="list-style-type: none">• Modified Unit Assessment• Modified Chapter Assessment

Standards (NJSLs) Addressed in this Unit

Counting and Cardinality K. CC
A. Know number names and the count sequence. 1. Count to 100 by ones and by tens. 2. Count forward beginning from a given number within the known

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sequence (instead of having to begin at 1).

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).

B. Count to tell the number of objects.

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.

C. Compare numbers.

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.1

7. Compare two numbers between 1 and 10 presented as written numerals.

Number and Operations in Base Ten K.NBT

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

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.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

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

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

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

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

PRACTICES

- CLKSP4 Demonstrate creativity and innovation.
- CLKSP5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CLKSP8 Use technology to enhance productivity, increase collaboration, and communicate effectively.

Interdisciplinary Connections:

English Language Arts

Reading

- **RI.K.1** With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how)

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Writing

- **W.K.5** With guidance and support from adults, strengthen writing through response and self-reflection using questions and suggestions from peers.

Speaking & Listening

- **SL.K.6** Speak audibly and express thoughts, feelings, and ideas clearly.

Standards for Mathematical Practice

- MP.1 Make sense of problems and persevere in solving them.
MP.2 Reason abstractly and quantitatively.
MP.3 Construct viable arguments & critique the reasoning of others.
MP.4 Model with mathematics.
MP.5 Use appropriate tools strategically
MP.6 Attend to precision.
MP.7 Look for and make use of structure.
MP.8 Look for and express regularity in repeated reasoning.

Unit 5: Numbers 11-20**Suggested Teaching Points****Represent, Count, and Write 11 to 19****Students will...**

- Use objects to decompose the numbers 11 and 12 into ten ones and some further ones.
- Represent 11 and 12 objects with number names and written numerals.
- Use objects to decompose the numbers 13 and 14 into ten ones and some further ones.
- Represent 13 and 14 objects with number names and written numerals.
- Use objects to decompose 15 into ten ones and some further ones and represent 15 with a number name and a written numeral.
- Solve problems by using the strategy draw a picture.
- Use objects to decompose the numbers 16 and 17 into ten ones and some further ones.
- Represent 16 and 17 objects with number names and written numerals.
- Use objects to decompose the numbers 18 and 19 into ten ones and some further ones.
- Represent 18 and 19 objects with number names and written numerals.

Represent, Count, and Write 20 and Beyond**Students will...**

- Model and count 20 with objects.
- Represent up to 20 objects with a number name and a written numeral.
- Count forward to 20 from a given number.
- Solve problems by using the strategy to make a model.
- Know the count sequence when counting to 50 by ones.
- Know the count sequence when counting to 100 by ones.
- Know the count sequence when counting to 100 by tens.
- Use sets of tens to count to 100.

Unit Specific Vocabulary

Eleven
Twelve
Ones
Thirteen
Fourteen
Fifteen

Sixteen
Seventeen
Eighteen
Nineteen
twenty

Suggested Modifications and Accommodations

These strategies can be adapted to scaffold for students needing more support or extend the learning for higher level students. Differentiation is accomplished through content, process, product, and learning environment.

Instructional Materials and Learning Activities

Core Instructional Materials:

- *Go Math K* © 2015 - Houghton Mifflin Harcourt
 - Teacher Edition, Student Workbooks, Unit Assessments, Student Reference Book, Activity Cards, Blackline Masters

Supplemental Materials:

- Digital Resources:
 - *Think Central*® Digital (<https://www-k6.thinkcentral.com>)
 - ebooks, eToolkit, eTeacher's Manual, eStudent Books, online resources
 - Online Practice Assignments (Includes but not limited to: IXL, Xtra Math)
 - [Grade K - eGlossary](#)
 - DreamBox

Special Education Students

- Use various methods to understand a student's learning style, i.e.- observation, surveys, conferring.
- Ask students to recall what they have already learned in ways that activate prior knowledge and build on that knowledge.
- Model problem-solving processes.
- Model productive and engaging partner talk.
- Provide direct instruction and/or think aloud for clarity.
- Build and/or use anchor charts with students and continually refer to them while teaching.
- Provide opportunities for students to turn and talk.
- Use modeling and manipulatives.
- Provide graphic organizers and graph paper.
- Use step-by-step how-to sheets to guide student problem-solving.
- Refer to student IEP goals and modifications.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

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- Provide frequent breaks.
- Use a problem [solving plan](#) to organize mathematical thinking.
- Incorporate [place value charts](#) into small group lessons.

Students at Risk

- Use the reteach component of Go Math! lesson in small group settings.
- Shorten assignments.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.
- Allow student to orally construct their response.
- Provide frequent breaks.
- [Making a Ten - BrainPop Jr.](#)
- [Basic Adding - BrainPop Jr.](#)
- [Basic Subtraction - BrainPop Jr.](#)

English Language Learners

- [Grade K - eGlossary](#)
- Allow use of a bilingual dictionary.
- Allow use of handheld translator.
- Ask students to recall what they already learned in ways that activate their prior knowledge.
- Use pre-assessment data to drive instruction.
- Use preferential seating.
- Use flexible grouping.
- Model productive and engaging partner talk.
- Allow for extended time.
- Provide guided notes as necessary.

Gifted and Talented

- Provide opportunities to lead discussion.
- Use flexible grouping.
- *Enrichment* activities
- Enrichment Activity Cards
- Challenge/higher level questioning
- Use projects, such as the Real World and STEM projects from Go Math!

Students with 504 Plans:

- *Reteach* lesson
- Modification of journal pages.
- Use of manipulatives, counters and number grid, and vocabulary picture cards.
- Quick Look Cards to provide experience decomposing numbers.
- Have children use craft sticks to represent and solve problems.

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- Extended time & think time
- Prompting
- Reassurance
- Preferential seating
- Repeated directions
- Behavior chart to increase focus and work completion
- Sensory breaks with timers

Social-Emotional Learning Competencies

- **Self-Awareness**: ability to recognize one's emotions and know one's strengths and limitations
 - Connections:
 - Reflecting on one's learning (Oral, Thumbs Up, Thumbs Down, Pictures, etc.)
- **Self-Management**: ability to regulate and control one's emotions and behaviors, particularly in stressful situations
 - Connections:
 - Visit the mindfulness/cool down corner in the classroom for self-soothing activities (Squishy ball, sand timer, fidget popper, etc.)
- **Social Awareness**: ability to take the perspective of others, demonstrate empathy, acknowledge and appreciate similarities and differences, and understand how one's actions influence and are influenced by others
 - Connections:
 - Students collaborate and help each other during math centers
- **Relationship Skills**: refers to one's ability to demonstrate prosocial skills and behaviors in order to develop meaningful relationships and resolve interpersonal conflicts
 - Connections:
 - Class discussions
 - Incentives for individual students and small groups
- **Responsible Decision-Making**: refers to the ability to use multiple pieces of information to make ethical and responsible decisions
 - Connections:
 - Class rules and routines
 - Class discussions
 - Following directions for math centers

K Grade Math Curriculum

Unit 6: Measurement and Data

Refer to Go Math! Chapters 11-12

Unit Overview

In this unit, as students learn about length, they should be guided to make comparisons between objects that explicitly display the attribute of length and use terms such as “same as,” “shorter than,” and “longer than.” As students are learning about weight, they will compare and use terms such as “heavier,” “lighter,” or “the same.” In this unit, students will learn to tell time to the hour and the half hour.

Enduring Understandings

- We can use graphs to organize information and make comparisons.
- Weight is the measurement of the pull of gravity on an object.

Essential Questions

- How can we use pictures to make numerical information easy to interpret?
- How do we measure length and weight?
- Why do we need to learn about time?

Assessments

Possible Formative Assessments
<ul style="list-style-type: none">• Teacher Observation• Student Participation• One-to-One Conferring• Small Strategy Groups• LinkIt! Progress Reports• DreamBox Progress Reports
Summative Assessments
<ul style="list-style-type: none">• Chapter Quizzes & Tests• Student Self-Reflection by Chapter• Chapter Performance Tasks (as appropriate)• Online Math Activity Scores
Benchmark Assessments
<ul style="list-style-type: none">• Go Math! Gr. K End of Year Assessment

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Alternative Assessments

- Modified Unit Assessment
- Modified Chapter Assessment

Standards (NJSL) Addressed in this Unit

Measurement and Data K.MD

A. Describe and compare measurable attributes.

1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
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. For example, directly compare the heights of two children and describe one child as taller/shorter.

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

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Computer Science and Design Thinking

- 8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. (Creating passwords and using DreamBox)
- 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

Career Readiness, Life Literacies, and Key Skills

LIFE LITERACIES AND KEY SKILLS

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

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- **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.

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Unit 6: Measurement and Data

Suggested Teaching Points

Measurement

Students will...

- Directly compare the lengths of two objects.
- Directly compare the heights of two objects.
- Solve problems by using the strategy to draw a picture.
- Directly compare the weights of two objects.
- Describe several measurable attributes of a single object.

Classify and Sort Data

Students will...

- Classify and count objects by color.
- Classify and count objects by shape.
- Classify and count objects by size.
- Make a graph to count objects that have been classified into categories.
- Read a graph to count objects that have been classified into categories.

Unit Specific Vocabulary

Longer
 Same length
 Shorter
 Same height
 Taller
 Heavier
 Lighter
 Same weight
 Blue

Classify
 Color
 Green
 Red
 Yellow
 Shape
 Big
 Size
 Small

Category	Graph
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