MATH CURRICULUM

Grade Kindergarten

PRINCIPLE ACADEMY CHARTER

Principle Academy Charter School

Mathematics-Grade Kindergarten

MISSION

The Principle Academy Charter School will show mastery of standards-driven, international, college preparatory curriculum, delivered through proven research-based instruction. Students will develop positive values and social behaviors through a nurturing school environment.

PHILOSOPHY

The philosophy of Principle Academy Charter School ("PAC") is built on (1) the belief that student outcomes are paramount, and (2) the understanding that a strong foundation is necessary to ensure sustained, long-range success for all students. At our core, we believe that students must develop positive values and social behaviors through a nurturing school climate and student cultural activities. Our educational approach is classroom-based, and students receive all instruction from certified teachers within the school building. Our educational approach is grounded in a student-centered program where all curriculum, assessments, operational decisions, and parental and/or community involvement is designed to ensure that school time is focused on the student and his/her learning and development.

> PAC executes its mission and philosophy by providing all children who enroll in PAC—regardless of the student's background, socio-economic status, or academic record—with a world-class public education in a student-centered setting that emphasizes civic responsibility and personal development, as well as academic rigor. Each letter of CHARTER represents a **PRINCIPLE**, *i.e.*, a core value, of PAC:
>
> C - Civility (Kindness)
> H - Honesty
> A- Academics
> R - Respect
> T - Togetherness
> E - Empowerment
> R – Responsibility

PAC implements standards-driven curriculum, including clearly defined student-learning objectives that exceed the NJ Performance Framework for both grade and content level requirements. Our curriculum is aligned with the Common Core State Standards and the New Jersey Student Learning Standards (NJSLS). Our curriculum not only ensures that students are prepared for success in college, but also life beyond college

PAC has adopted the *Ready Mathematics* program (https://www2.curriculumassociates.com/products/ready-new-jersey-mathematics.aspx) and, likewise, has developed a new curriculum in compliance with the New Jersey Student Learning Standards and Curriculum Frameworks. Our curriculum is designed to develop strong mathematical thinkers, focus on conceptual understanding using real-world problem solving, and help students become active participants in their own learning.

PAC LEADERSHIP TEAM

Kenneth Silver	School Director
Alvaro Cores	Assistant School Director
Greg Freelon	School/Student Liaison
Carol Spina	Dean of Instruction
Cyndee' Phoenix	Dean of Community Engagement
Paul A, Cicchini	Dean of Special Education

PAC SCHOOL BOARD

Peter Caporilli	President
Rolanda Brewer	Vice President
Ed Blake	
Stacey Zacharoff	
Kelli Prinz	Attorney
Michael Falkowski	SBA

Students enter kindergarten with a broad range of experiences with numbers. Some will be able to count by rote from 1 to 100 (or a subset of that range). Others may have limited experience with counting to 10. Keep in mind that the content standards identify what students should know and be able to do by the end of kindergarten.

Therefore, you will need to scaffold individual standards to meet the needs of students. For example, it is likely that you will begin the school year focusing on rote counting (sequencing number names) to 20 and at the same time work only on counting physical objects to 5. By the end of the year, students should be able to successfully complete all of these standards.

Once students are fluent at counting beginning with 1, they begin to work on counting forward from a number other than 1 within a given range. This is a prerequisite skill for counting on as students begin to work with addition.

Students move from rote counting to finding the number of objects in a set. Cardinality refers to the actual count or number of items in a set. As students show proficiency rote counting within a range of numbers, for example, 1 to 10, they can begin to find the number of objects in a set within that range. It is important for students to connect the physical objects (3 counters) with the oral number word (three) with the numeral (3). Students should begin with counting physical objects, progress to pictures, and then connect the physical representations to the numeral.

Kindergarten students will experience comparing quantities for the first time. Precision with language is critical. Scaffolding experiences that start by using concrete materials with obvious comparisons and honing in on quantities that get closer in size will provide students with the time needed to understand the concepts.

Students develop an understanding of the meaning of addition and subtraction by modeling how they can put together (compose) or take apart (decompose) up to 10 objects in different ways. It is critical for students to have a variety of experiences with concrete materials.

The study of geometry in kindergarten is essential as students must be able to recognize and visualize shapes in their surroundings. Many students are already exposed to shapes as they play, draw, color, build, and explore with toys and technology. Students will learn that specific attributes (number of side, angles, etc.) define what a shape is called and other attributes (color, size, and orientation) do not. Using attributes, students identify and describe squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres. Students find and identify shapes around home and school. They recognize, compare, and sort the shapes based upon geometric attributes. A variety of experience must be provided for students to locate both two-dimensional and three-dimensional objects as well as describe the positional location of the objects.

Principle Academy Charter School

Mathematics-Grade Kindergarten

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 1 **Connecting Counting to Cardinality**	■ K.CC.A.1* ■ K.CC.A.3* ■ K.CC.B.4 ■ K.CC.B.5* ■ K.OA.A.1* ▭ K.MD.B.3* ◯ K.G.A.1	• Know number names and the count sequence to 10 • Count to tell the number of objects • Understand addition as putting together and adding to and understand subtraction as taking apart and taking from • Identify and describe shapes	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Unit 1: **Suggested Open Educational Resources**	K.CC.A.1 Counting Circles K.CC.A.1 Choral Counting K.CC.A.3 Number TIC TAC TOE K.CC.B.4 Counting Mat K.CC.B.5 Finding Equal Groups K.OA.A.1 Ten Frame Addition K.MD.B.3 Sort and Count 1		
Unit 2 **Counting, Addition & Subtraction**	■ K.CC.A.1* ■ K.CC.A.2 ■ K.CC.A.3* ■ K.OA.A.1* ■ K.OA.A.2 ■ K.CC.B.5* ■ K.CC.C.6 ■ K.CC.C.7 ■ K.OA.A.5*	• Know number names and the count sequence to 50 • Understand addition as putting together and adding to understand subtraction as taking apart and taking from • Count to tell the number of objects • Compare numbers	
Unit 2: **Suggested Open Educational Resources**	K.CC.A.1 Choral Counting K.CC.A.2 Start-Stop Counting K.CC.A.3 Assessing Writing Numbers K.OA.A.2 Dice Addition 2 K.OA.A.2 What's Missing? K.CC.B.5 Finding Equal Groups K.CC.C.6 Which number is greater? Which number is less? How do you know? K.CC.C.7 Guess the Marbles in the Bag K.OA.A.5 Many Ways to Do Addition 1		

Principle Academy Charter School

Mathematics-Grade Kindergarten

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
Unit 3 **Place Value & Measurement**	■ K.CC.A.1* ◎ K.MD.A.1 ◎ K.MD.A.2 □ K.MD.B.3* ◎ K.G.A.2 ◎ K.G.A.3 ■ K.OA.A.3 ■ K.OA.A.4 ■ K.NBT.A.1* ■ K.OA.A.5*	• Know number names and the count sequence to 70 • Describe and compare measurable attributes • Classify and count the number of objects in categories • Identify and describe shapes • Understand addition as putting together and adding to understand subtraction as taking apart and taking from • Work with numbers 11-19 to gain foundations for place value	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Unit 3: **Suggested Open Educational Resources**	K.CC.A.1 Assessing Counting Sequences Part 1 K.MD.A.1 Which is heavier? K.MD.A.2 Which is Longer? K.MD.B.3 Sort and Count 2 K.OA.A.3 Shake and Spill K.OA.A.3 Pick Two K.NBT.A.1 What Makes a Teen Number K.OA.A.5 My Book of Five		
Unit 4 **Place Value & Geometric Shapes**	■ K.CC.A.1* ■ K.OA.A.5* □ K.G.B.4 □ K.G.B.5 □ K.G.B.6 ■ K.NBT.A.1*	• Know number names and the count sequence to 100 • Fluently add and subtract within 5 • Analyze, compare, create, and compose shapes • Work with numbers 11-19 to gain foundations for place value	
Unit 4: **Suggested Open Educational Resources**	K.CC.A.1 Counting by Tens K.G.B.4 Alike or Different Game K.NBT.A.1 What Makes a Teen Number		

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Unit 1 Kindergarten				
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**	**Resources**	**Days**
■ K.CC.A.1. Count to 100 by ones and by tens. *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Number names and the count sequence up to 10 Students are able to: • count orally by ones up to 10. Learning Goal 1: Count by ones up to 10.	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 24- Count to 100	Kindergarten Topics should be integrated and not limited to a specific number of Days
■ 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)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): • Represent the number of objects with a numeral. Students are able to: • write numbers from 0 to 10. Learning Goal 2: Represent the number of objects with a written numeral up to 10.	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 2- Count 1,2,3 Lesson 3- Count 4 Lesson 4- Count 5 Lesson 7- Count 6 and 7 Lesson 10- 8 and 9 Lesson 11- Count 10 Lesson 22- Count Teen Numbers	Kindergarten Topics should be integrated and not limited to a specific number of Days
■ K.CC.B.4. Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.B.4a.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.4b.Understand	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Objects can be counted in any order. Each object is counted once (one-to-one correspondence). • The next number name in counting is always one greater than the previous number. • The last number name said tells the number of objects counted. Students are able to: • say number names in the standard order. • pair each object with one number name (one-to-one correspondence). • count to tell the number of objects. • count objects arranged in any order.	Ready Math Lesson 12- Compare within 10	Kindergarten Topics should be integrated and not limited to a specific number of Days

Unit 1 Kindergarten				
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**	**Resources**	**Days**
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. K.CC.B.4c.Understand that each successive number name refers to a quantity that is one larger.		• identify the last number named as the number of objects counted. Learning Goal 3: Assign an ascending number name for each object in a group. Learning Goal 4: State the last number named as the number of counted objects in the set. Learning Goal 5: Identify the next number name in counting as one greater than the previous number.		
■ 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)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration. • count to tell the number of objects when asked *how many?* questions . • given a number from 1-10, count out that many object. Learning Goal 6: Answer *how many?* questions about groups of up to 10 objects when arranged in a line, rectangular array or circle. Learning Goal 7: Answer *how many?* questions about groups of up to 5 when arranged in a scattered configuration.	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 22 Count Teen Numbers	Kindergarten Topics should be integrated and not limited to a specific number of Days
■ 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.	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	Concept(s): • Understand addition as putting together and adding to. • Understand subtraction as taking apart and taking from. Students are able to: • create addition events with objects (up to 10).	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 14- Understand Addition	Kindergarten Topics should be integrated and not limited to a specific

Unit 1 Kindergarten				
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**	**Resources**	**Days**
*(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• create addition events with drawings and sounds (up to 10). • create addition events by acting out situations and with verbal explanations. Learning Goal 8: Create addition events with objects, fingers, drawings, sounds (e.g., claps), acting out situations and verbal explanations for sums up to 10.	Lesson 15- Add within 5 Lesson 16–Understand Subtraction Lesson 17- Subtract within 5 Lesson 18- Add within 10	number of Days
K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): • Objects can be sorted based on their properties. Students will be able to: • sort objects into categories Learning Goal 9: Classify objects into given categories and count the objects in each category (up to 10 objects)	Ready Math Lesson 28 Sort Objects	Kindergarten Topics should be integrated and not limited to a specific number of Days
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.	MP.7 Look for and make use of structure.	Concept(s): • Shapes have names. • Positional words (above, below, besides, in front of, behind, next to) Students will be able to: • name shapes in order to describe objects in the environment. • use terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to* in order to describe relative positions of objects. Learning Goal 10: 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.	Ready Math Lesson 29 See position and Shape	Kindergarten Topics should be integrated and not limited to a specific number of Days

Unit 1 Kindergarten What This May Look Like	
School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
• iReady Assessments • Student Conferencing • Observation Checklist • Anecdotal Notes • Homework • Running Records • Student Self-Evaluations • Short constructed response questions • Multiple choice questions • Academic/Domain specific vocabulary • Quizzes • Math Journal • Exit ticket • Accountable talk	• Unit Benchmark • Chapter Tests • iReady Assessments • State Assessments

Focus Mathematical Concepts

Common Misconceptions:

K.CC.1 Students who confuse the sequence of numbers (ex. 1,4,7,3,9, 2), skip numbers (ex. 1,2,3,5,6,7,9…) or repeat numbers (1,2,3,4,2,3,4) need more experience counting within a smaller range of numbers. Students should be fluent within a range before increasing the range. Words for the teen numbers may be confusing since they do not follow the pattern of other decade numbers (ex. Fourteen vs. twentyfour). Provide more practice with reciting teen numbers and connecting the number name with the written numeral. Focus on oral patterns such as the sequence of the ones place digits in the twenties is the same as the sequence of the ones place as digits in the thirties. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32, 33, 34, 35, 36, 37, 38, 39

K.CC.4 Watch for students who find it confusing to say one number name with one object as they count (one-to-one correspondence). Begin with a smaller number of objects and model saying the number name as you physically move the object. Have students do the same. Also, watch for students who double count an object. Physically moving the object and saying one number name for each object will help to reinforce one-to-one correspondence; that is, one object goes with one number name. Students may see 5 items spread out as different from 5 items close together. Students should physically move the objects matching one item from one set with one item from the other set to understand that the count of 5 remains the same no matter how the objects are organized.

K.CC.5 Some students may be able to match a quantity with a number (or numeral) but cannot produce that number of objects when given materials or asked to draw a picture. Looking for a specific quantity when given a choice of collections has a lower level cognitive demand (is easier) than having to produce a set of objects given a number. This standard will take time to develop.

How many apples?

Versus

Show me 5 apples

K.OA.1 If students do not have time to draw pictures before working with numerical expressions and equations, they may be more likely to use finger counting and rote memorization in working with addition and subtraction-especially when learning basic facts.

K.MD.3 Often times, students are able to sort but are not able to label each set. Through discussions, the teacher can help students think about and create a label for each set of items sorted. Counting may be an issue for some students as they point to one object and count 1, 2 before pointing to the next object in a set or collection. Teachers can review one or more correspondence and remind students, as they point to one object, only one number should be associated with the count.

K.G.1 When first learning about shapes, students may use informal names for shapes, such as calling a sphere a ball or cube a box. Reinforce appropriate vocabulary by reminding students to use the correct mathematical name. To help with this misconception, provide a variety of shapes to discuss and sort. Talk about how students can recognize examples and non-examples of shapes in the environment.

Number Fluency
K.OA.A.5 Add and Subtract with Ten

District/School Tasks	**District/School Primary and Supplementary Resources**

ELA Connections:
• Math Journals
• Math Word Wall
• Math Storytelling
• Think-Write-Pair-Share
• Prompts use successful pre-writing strategies such as:
  ○ Make a web.
  ○ Draw a picture and label.
  ○ Write a definition in your own words.
  ○ Create examples of the skill/concept and explain.
  ○ Write about a real-life use of this math concept or skill.
  ○ Connect the concept/skill to concepts/skills you already learned and use.
  ○ Reflect on your understanding of this concept/skill on a scale of 1-5 and explain.
  ○ Create a K-W-L chart
 	
International/ Global Activities-
https://populationeducation.org/teacher-resources/
Scholastic
http://teacher.scholastic.com/max/index.htm
Kindergarten Math
https://www.education.com/activity/kindergarten/math/
	Fact Fluency Resources:
	● https://www.factmonster.com/math/flashcards
	● https://kahoot.com/welcomeback/
	● https://quizlet.com/
	● https://www.socrative.com/
	● https://www.funbrain.com/games/math-baseball
	● https://www.multiplication.com/games/all-games
	● https://mathfactspro.com/math-fact-fluency-game/
	Math Fluency Classroom Ideas:
	● https://onestopteachershop.com/2015/06/5-ways-to-make-fact-fluency-fun.html
	● https://www.weareteachers.com/15-fun-ways-to-practice-math/
	Resources
	https://njctl.org
	https://www.engageny.org/
	https://www.illustrativemathematics.org/content-standards
	http://www.k-5mathteachingresources.com/
	https://www.mathplayground.com/

Instructional Best Practices and Exemplars
• Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions. • Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies. • Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving. • Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments. • Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships. • Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems. • Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships. • Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning. • Identifying Similarities and Differences • Reinforcing Effort and Providing Recognition • Homework and Practice • Nonlinguistic Representations • Cooperative Learning • Setting Objectives and providing Feedback • Gradual Release of Responsibility • Managing response rates • Checks for understanding • Coaching • Visuals • Collaborative problem solving • Active engagement strategies
21st Century Life and Careers Standards **Career Ready Practices:** CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.
CRP12: Work productively in teams while using cultural global competence

Personal Financial Literacy - 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.

Career Awareness, Exploration, And Preparation - 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.
9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

Technology Standards

Technology Standards

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

A. Technology Operations and Concepts:

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual Environments (i.e. games, museums)

B. Creativity and Innovation

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

C. Communication and Collaboration:

8.1.2.C.1 Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

D. Digital Citizenship

8.1.2.D.1 Develop an understanding of ownership of print and non-print information.

E: Research and Information Fluency:

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

F. Critical thinking, problem solving, and decision making:

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.

A. The Nature of Technology: Creativity and Innovation

8.2.2.A.1 Define products produced as a result of the technology or of nature.

8.2.2.A.2 Describe how designed products and systems are useful at school, home or work.

8.2.2.A.3 Identify a system and the components that work together to accomplish its purpose.

8.2.2.A.4 Choose a product to make and plan the tools and material needed.

8.2.2.A.5 Collaborate to design a solution to a problem affecting the community.

Accommodations/ Differentiation

- Modify activities/assignments/projects/assessments
- Breakdown activities/assignments/projects/assessments into manageable units
- Additional time to complete activities/assignments/projects/assessments
- Provide an option for alternative activities/assignments/projects/assessments
- Adjust Pacing of Content
- Small Group Intervention/Remediation
- Individual Intervention/Remediation
- Guided Notes
- Graphic Organizers

***IEP*-Follow IEP Plan which may contain some of the following examples…**

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video

***504*-Follow 504 Plan which may contain some of the following examples…**

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud

- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

All WIDA Can Do Descriptors can be found at this link: https://www.wida.us/standards/CAN_DOs/

WIDA Can Do Descriptors:

Listening
Speaking
Reading
Writing
Oral Language

ELL Strategies

Develop Meaning
Elicit Prior Knowledge
Identify Relationships
Rephrase -Scaffold Language

At Risk Students

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Unit 2 Kindergarten				
Content Standards	**Suggested Mathematical Practices**	**Critical Knowledge & Skills**	**Resources**	**Days**
■ K.CC.A.1. Count to 100 by ones and by tens.*(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Number names and the count sequence up to 50 Students are able to: • count orally by ones up to 50. • count orally by tens up to 50. Learning Goal 1: Count to 50 by ones and by tens.	*Problems should be embedded in daily lessons throughout the school year.*	Kindergarten Topics should be integrated and not limited to a specific number of Days Repeated
■ K.CC.A.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).		Concept(s): No new concept(s) introduced Students will be able to: • count orally by ones up to 50, beginning at any number. Learning Goal 2: • Count forward up to 50 starting from numbers other than one.	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 24 Count to 100 by tens Lesson 25- Count to 100 by ones	
■ 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)	MP. 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): • The number of objects can be represented by a numeral. Students are able to: • write numbers from 0 to 20. Learning Goal 3: Represent a number of objects with a written numeral 0 to 20.	*Problems should be embedded in daily lessons throughout the school year.*	Repeated
■ 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)	MP.1 Make sense of problems and persevere in solving them. MP. 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): • Understand addition as putting together and adding to. • Understand subtraction as taking apart and taking from. Students are able to: • create subtraction and addition events with objects (up to 10). • create subtraction and addition events with drawings and	*Problems should be embedded in daily lessons throughout the school year.*	Repeated

Unit 2 Kindergarten				
Content Standards	**Suggested Mathematical Practices**	**Critical Knowledge & Skills**	**Resources**	**Days**
	MP.8 Look for and express regularity in repeated reasoning.	sounds (up to 10). • create subtraction and addition events by acting out situations and with verbal explanations. Learning Goal 4: Create addition and subtraction events with objects, fingers, drawings, sounds (e.g., claps), acting out situations and verbal explanations (up to 10).		
■ 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.*	MP.1 Make sense of problems and persevere in solving them. MP. 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): No new concept(s) introduced Students will be able to: • use objects and drawings to represent addition and subtraction. • add and subtract within 10. Learning Goal 5: Use objects or drawings to represent and solve addition and subtraction word problems (within 10).	Ready Math Lesson 15 Add within 5 Lesson 17 Subtract within 5 Lesson 18 Add within 10 Lesson 19 Subtract within 10	
■ 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)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration. • count to tell the number of objects when asked "how many?" questions. • given a number from 1-20, count out that many object. Learning Goal 6: Answer *how many?* questions about groups of up to 20 objects when arranged in a line, rectangular array or circle. Learning Goal 7: Answer *how many?* questions about groups of up to 10 when arranged in a scattered configuration .	*Problems should be embedded in daily lessons throughout the school year.*	Repeated
■ 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*	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express	Concept(s): • Different groups can have different numbers of objects. • Numbers of objects can be compared using phrases such as *greater than*, *less than* and *equal to.*	Ready Math Lesson 5 Compare within 5 Lesson 12	

Unit 2 Kindergarten				
Content Standards	**Suggested Mathematical Practices**	**Critical Knowledge & Skills**	**Resources**	**Days**
counting strategies.	regularity in repeated reasoning.	Students will be able to: • compare the number of objects (up to 10) in two groups. • identify whether the number of objects in one group is greater than, less than, or equal to to the number of objects in another group. Learning Goal 8: 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).	Compare within 10	
■ K.CC.C.7. Compare two numbers between 1 and 10 presented as written numerals.	MP.2 Reason abstractly and quantitatively.	Concept(s): • Number names and the count sequence • The next number name in counting is always one greater than the previous number. • Count to tell the number of objects. Students will be able to: • compare numbers (up to 10) written as numerals. Learning Goal 9: Compare numbers (up to 10) written as numerals.	Ready Math Lesson 12 Compare within 10	
■ K.OA.A.5. Demonstrate fluency for addition and subtraction within 5.- (by the end of Kindergarten). *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students will be able to: • add within 5 with accuracy and efficiency . Learning Goal 10: Use mental math strategies to solve addition facts within 5.	*Problems should be embedded in daily lessons throughout the school year.* Ready Math Lesson 6 Make 3,4,5	

Unit 2 Kindergarten What This May Look Like	
School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
• iReady Assessments • Student Conferencing • Observation Checklist • Anecdotal Notes	• Unit Benchmark • Chapter Tests • iReady Assessments • State Assessments

• Homework • Running Records • Student Self-Evaluations • Short constructed response questions • Multiple choice questions • Academic/Domain specific vocabulary • Quizzes • Math Journal • Exit ticket • Accountable talk	

Focus Mathematical Concepts

Common Misconceptions:

K.CC.1 Students who confuse the sequence of numbers (ex. 1,4,7,3,9, 2), skip numbers (ex. 1,2,3,5,6,7,9…) or repeat numbers (1,2,3,4,2,3,4) need more experience counting within a smaller range of numbers. Students should be fluent within a range before increasing the range. Words for the teen numbers may be confusing since they do not follow the pattern of other decade numbers (ex. Fourteen vs. twentyfour). Provide more practice with reciting teen numbers and connecting the number name with the written numeral. Focus on oral patterns such as the sequence of the ones place digits in the twenties is the same as the sequence of the ones place as digits in the thirties. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32, 33, 34, 35, 36, 37, 38, 39

K.CC.2 Students who struggles with developing this standard, particularly with numbers greater than 10, should master counting within a sequence before counting forward from a number in that sequence. For example, students should be able to rote count to 20 before they ae expected to count on from 8. Begin with smaller numbers and progress to greater numbers. Limit how far you want students to count and then increase the range.

K.CC.5 Some students may be able to match a quantity with a number (or numeral) but cannot produce that number of objects when given materials or asked to draw a picture. Looking for a specific quantity when given a choice of collections has a lower level cognitive demand (is easier) than having to produce a set of objects given a number. This standard will take time to develop.

K.CC.6 Students who have trouble with the vocabulary of comparison need more opportunities to compare obvious amounts and practice the different ways to describe the comparison. For example, there are more teddy bear counters than chips. There are fewer chips than teddy bear counters. Keep the number of objects in each set within the range of student success and then build to using greater numbers of items. Continue giving students opportunities to describe their thinking and to use comparison vocabulary.

K.CC.7 Students who cannot accurately compare the number of physical objects are likely to struggle with comparing the numbers written as numerals. Modeling the transition between the vocabulary of comparing the count of physical objects and using the same vocabulary with the number of items will help students to practice the vocabulary of greater than (more than), less than (fewer than), and same as.

K.OA.1 If students do not have time to draw pictures before working with numerical expressions and equations, they may be more likely to use finger counting and rote memorization in working with addition and subtraction-especially when learning basic facts.

K.OA.2 Students may develop the misconception that certain vocabulary always represents a particular operation. For example, they may perceive that the word more indicates addition, whereas later when working with comparisons, a situation with more may actually call for subtraction. It is critical that students connect what to do with the actions or problem situation and use models rather than to look for clue words.

K.OA.5 Students who cannot give a correct response in a reasonable amount of time (3-4 seconds) or are depending on counting on their fingers have not developed fluency with

these facts. An important prerequisite of adding and subtracting is being able to count. Students who continue to count from 1 or struggle with counting on need practice with rote counting as well as more experience with concrete materials and drawings. Only when they are ready should they work with making explicit connections to expressions and equations and basic facts. Begin with strategies such as counting on 1 or 2. Help students to see the pattern of what happens when they add zero. Explore with doubles facts (1+1, 2+2). The sums to 5 present opportunities to think about decomposing and added to make the sum 2+2+1. Subtraction facts are usually more difficult for students to master and require more concrete experiences with subtraction problem situations and concrete connections to related addition facts.

Number Fluency
K.OA.A.5 Add and Subtract with Ten

District/School Tasks	**District/School Primary and Supplementary Resources**
ELA Connections: • Math Journals • Math Word Wall • Math Storytelling • Think-Write-Pair-Share • Prompts use successful pre-writing strategies such as: o Make a web. o Draw a picture and label. o Write a definition in your own words. o Create examples of the skill/concept and explain. o Write about a real-life use of this math concept or skill. o Connect the concept/skill to concepts/skills you already learned and use. o Reflect on your understanding of this concept/skill on a scale of 1-5 and explain. o Create a K-W-L chart International/ Global Activities- https://populationeducation.org/teacher-resources/ Scholastic http://teacher.scholastic.com/max/index.htm Kindergarten Math https://www.education.com/activity/kindergarten/math/	Fact Fluency Resources: ● https://www.factmonster.com/math/flashcards ● https://kahoot.com/welcomeback/ ● https://quizlet.com/ ● https://www.socrative.com/ ● https://www.funbrain.com/games/math-baseball ● https://www.multiplication.com/games/all-games ● https://mathfactspro.com/math-fact-fluency-game/ Math Fluency Classroom Ideas: ● https://onestopteachershop.com/2015/06/5-ways-to-make-fact-fluency-fun.html ● https://www.weareteachers.com/15-fun-ways-to-practice-math/ Resources https://njctl.org https://www.engageny.org/ https://www.illustrativemathematics.org/content-standards http://www.k-5mathteachingresources.com/ https://www.mathplayground.com/

Instructional Best Practices and Exemplars

- Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
- Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote

mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.

- Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
- Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
- Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
- Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
- Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
- Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.
- Identifying Similarities and Differences
- Reinforcing Effort and Providing Recognition
- Homework and Practice
- Nonlinguistic Representations
- Cooperative Learning
- Setting Objectives and providing Feedback
- Gradual Release of Responsibility
- Managing response rates
- Checks for understanding
- Coaching
- Visuals
- Collaborative problem solving
- Active engagement strategies

21st Century Life and Careers Standards

Career Ready Practices:

CRP2: Apply appropriate academic and technical skills.

CRP4: Communicate clearly and effectively and with reason.

CRP6: Demonstrate creativity and innovation.

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

CRP11: Use technology to enhance productivity.

CRP12: Work productively in teams while using cultural global competence

Personal Financial Literacy - 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.

Career Awareness, Exploration, And Preparation - 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.
9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

Technology Standards

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

A. Technology Operations and Concepts:

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual Environments (i.e. games, museums)

B. Creativity and Innovation

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

C. Communication and Collaboration:

8.1.2.C.1 Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

D. Digital Citizenship

8.1.2.D.1 Develop an understanding of ownership of print and non-print information.

E: Research and Information Fluency:

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

F. Critical thinking, problem solving, and decision making:

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.

A. The Nature of Technology: Creativity and Innovation

8.2.2.A.1 Define products produced as a result of the technology or of nature.

8.2.2.A.2 Describe how designed products and systems are useful at school, home or work.

8.2.2.A.3 Identify a system and the components that work together to accomplish its purpose.

8.2.2.A.4 Choose a product to make and plan the tools and material needed.

8.2.2.A.5 Collaborate to design a solution to a problem affecting the community.

Accommodations/ Differentiation

- Modify activities/assignments/projects/assessments
- Breakdown activities/assignments/projects/assessments into manageable units
- Additional time to complete activities/assignments/projects/assessments
- Provide an option for alternative activities/assignments/projects/assessments

- Adjust Pacing of Content
- Small Group Intervention/Remediation
- Individual Intervention/Remediation
- Guided Notes
- Graphic Organizers

***IEP*-Follow IEP Plan which may contain some of the following examples…**

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video

***504*-Follow 504 Plan which may contain some of the following examples…**

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts

- Limit number of questions
- Scribe
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

All WIDA Can Do Descriptors can be found at this link: https://www.wida.us/standards/CAN_DOs/

WIDA Can Do Descriptors:

Listening
Speaking
Reading
Writing
Oral Language

ELL Strategies

Develop Meaning
Elicit Prior Knowledge
Identify Relationships

Rephrase -Scaffold Language
At Risk Students • Additional time during intervention time • Questions read aloud • Graphic organizers • Vocabulary support • Mnemonic devices • Songs/videos to reinforce concepts • Manipulatives • Calculators • Reteach pages • Leveled homework • Lesson intervention activities • Math Diagnosis & Intervention System • Another look homework video • Practice buddy
Gifted & Talented • Independent projects • Enrichment pages • Online games • Leveled Homework • Extension Activities • Today's Challenge

Principle Academy Charter School

Mathematics-Grade Kindergarten

Unit 3 Kindergarten				
Content & Practice Standards		**Critical Knowledge & Skills**	**Resources**	**Days**
■ K.CC.A.1. Count to 100 by ones and by tens. *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Number names and the count sequence up to 70 Students are able to: • count orally by ones up to 70. • count orally by tens up to 70. Learning Goal 1: Count to 70 by ones and by tens.	*Problems should be embedded in daily lessons throughout the school year.*	Repeated
◎ K.MD.A.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	MP.7 Look for and make use of structure.	Concept(s): • Measurable attributes: length, weight, size (volume) • A single object can have more than one measurable attribute. Students are able to: • identify measureable attributes. • describe the measurable attributes of multiple objects. • describe multiple measurable attributes of a single object. Learning Goal 2: Describe measurable attributes of multiple objects and describe several measurable attributes of a single object.	Ready Math Lesson 26 Compare Length Lesson 27Compare Weight	
◎ 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.*	MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): • When comparing objects by measuring, each object must have the same starting point. • Moving an object does not change its measure. Students are able to: • directly compare and describe two objects with measurable attribute in common using *more of* or *less of*. Learning Goal 3: Directly compare two objects with a measurable attribute in common; use *more of* or *less of* to compare the objects.	Ready Math Lesson 26 Compare Length Lesson 27Compare Weight	
▢ K.MD.B.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. *(benchmarked)	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concept(s): • Groups can be sorted by the number of objects in each group. Students are able to: • sort objects into groups. • sort the group by count.		Repeated

Unit 3 Kindergarten				
Content & Practice Standards		**Critical Knowledge & Skills**	**Resources**	**Days**
		Learning Goal 4: Count the objects in given categories and sort the categories by count (up to 10 objects).		
◎ K.G.A.2. Correctly name shapes regardless of their orientation or overall size.	MP.7 Look for and make use of structure.	Concept(s): • Shapes have names. • Shapes can have the same names but appear different. Students are able to: • correctly names shapes regardless of their orientation or overall size. Learning Goal 5: Correctly names shapes regardless of their orientation or overall size.	Ready Math Lesson 30 Name Shapes	
◎ K.G.A.3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid")	MP.7 Look for and make use of structure.	Concept(s): • Shapes may be *flat* or *solid.* Students are able to: • identify shapes as two-dimensional (lying in a plane, *flat*) or three-dimensional (*not flat, solid*). • compare two- and three- dimensional shapes, in different sizes, and orientations. Learning Goal 6: Identify shapes as two-dimensional (lying in a plane, *flat*) or three-dimensional (*not flat, solid*).	Ready Math Lesson 30 Name Shapes	
■ 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)*	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Part-to-whole relationships • Some groups of objects can be broken into two smaller groups while the total number remains the same. • Some groups of objects can be broken into two smaller groups in more than one way. Students will be able to: • decompose numbers less than or equal to ten into two numbers. • record the decomposition with a drawing. • record the decomposition with an equation. • decompose the same number in more than one way. Learning Goal 7: Decompose numbers less than or equal to ten into	Ready Math Lesson 6 Make 3,4,5 Lesson 10 Make 8 and 9 Lesson 13 Make 10	

Unit 3 Kindergarten				
Content & Practice Standards		**Critical Knowledge & Skills**	**Resources**	**Days**
		pairs of numbers in more than one way and record with a drawing or equation.		
■ 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.	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • find a missing part of 10 using objects. • given a number from 1 to 9, use drawings, or equations to find the number that makes 10. Learning Goal 8*:* Given a number less than 10, find the number that makes 10.	Lesson 13 Make 10	
■ 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)	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Numbers from 11 to 19 can be represented as one group of ten *ones* and another group containing fewer than ten *ones.* Students are able to: • compose and decompose numbers from 11 to 19 into a group of ten *ones* and another group of one(s). • use the term *ones* to describe the number of objects in each group. • record each composition or decomposition using objects and drawings. • record each composition or decomposition by a drawing or equation. 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.	Ready Math Lesson 21 Understand Teen Numbers Lesson 23 Make Teen Numbers	
■ K.OA.A.5. Demonstrate fluency for addition and subtraction within 5 (by the end of Kindergarten). *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students will be able to: • add and subtract within 5 with accuracy and efficiency. Learning Goal 10: Use mental math strategies to solve addition and subtraction facts within 5.	*Problems should be embedded in daily lessons throughout the school year.*	Repeated

Unit 3 What This May Look Like	
School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
• iReady Assessments • Student Conferencing • Observation Checklist • Anecdotal Notes • Homework • Running Records • Student Self-Evaluations • Short constructed response questions • Multiple choice questions • Academic/Domain specific vocabulary • Quizzes • Math Journal • Exit ticket • Accountable talk	• Unit Benchmark • Chapter Tests • iReady Assessments • State Assessments

Focus Mathematical Concepts

Common Misconceptions:

K.CC.1 Students who confuse the sequence of numbers (ex. 1,4,7,3,9, 2), skip numbers (ex. 1,2,3,5,6,7,9…) or repeat numbers (1,2,3,4,2,3,4) need more experience counting within a smaller range of numbers. Students should be fluent within a range before increasing the range. Words for the teen numbers may be confusing since they do not follow the pattern of other decade numbers (ex. Fourteen vs. twenty-four). Provide more practice with reciting teen numbers and connecting the number name with the written numeral. Focus on oral patterns such as the sequence of the ones place digits in the twenties is the same as the sequence of the ones place as digits in the thirties. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32, 33, 34, 35, 36, 37, 38, 39

K.MD.3 Often times, students are able to sort but are not able to label each set. Through discussions, the teacher can help students think about and create a label for each set of items sorted. Counting may be an issue for some students as they point to one object and count 1, 2 before pointing to the next object in a set or collection. Teachers can review one or more correspondence and remind students, as they point to one object, only one number should be associated with the count.

K.G.2 Kindergarten students usually will not recognize a triangle that has been inverted or turned upside down. Students often say that an inverted triangle does not look like a triangle. Teachers can provide activities to talk about what a shape looks like and identify specific attributes that define a shape. Another way to address this misconception is to have students trace shapes.

K.G.3 Students may use incorrect terminology when describing shapes. For example, students may say a cube is a square. Teachers should help students learn than the two-dimensional shape is a part of the object (e.g., a square is a “face” of a cube).

K.OA.3 Although it is appropriate for kindergartners to use their fingers in initial counting and exploration experiences, focus on concrete and pectoral representations to develop an understanding that numbers can be put together and taken apart in a variety of ways. Students need many opportunities with different materials to explore this concept and to explain their thinking with numbers to 5 and later extending to 10. This forms the foundation for future work with place value and helps students to form mental images and strategies as they start to work with number facts.

K.OA.4 Watch for students who miscount the total number in their representation and actually decompose a number other than 10. Students who are struggling with counting strategies nee more experience modeling how smaller numbers can be decomposed and justifying by counting before working with 10.

K.OA.5 Students who cannot give a correct response in a reasonable amount of time (3-4 seconds) or are depending on counting on their fingers have not developed fluency with

these facts. An important prerequisite of adding and subtracting is being able to count. Students who continue to count from 1 or struggle with counting on need practice with rote counting as well as more experience with concrete materials and drawings. Only when they are ready should they work with making explicit connections to expressions and equations and basic facts. Begin with strategies such as counting on 1 or 2. Help students to see the pattern of what happens when they add zero. Explore with doubles facts (1+1, 2+2). The sums to 5 present opportunities to think about decomposing and added to make the sum 2+2+1. Subtraction facts are usually more difficult for students to master and require more concrete experiences with subtraction problem situations and concrete connections to related addition facts.
K.NBT.1 Kindergarten students have several new concepts with which to grapple as part of this standard including the notion of 10 ones being grouped together. Watch for those who struggle with this important place value concept. The concept that 1 group of 10 ones and some more ones can represent the same idea as the number they originally counted will be a stretch for some students, and they will need many opportunities to compose groups of 10 with concrete materials. The other concept that may present a challenge is the teen number names. A group of 10 and one more has the name "eleven"; a group of 10 and two more is called "twelve"; a group of 10 and three more is called "thirteen." Students entering kindergarten with little number experience may need much more practice with the representations and connecting representations to the number names.

Number Fluency
K.OA.A.5 Add and Subtract with Ten

District/School Tasks	**District/School Primary and Supplementary Resources**
ELA Connections: • Math Journals • Math Word Wall • Math Storytelling • Think-Write-Pair-Share • Prompts use successful pre-writing strategies such as: o Make a web. o Draw a picture and label. o Write a definition in your own words. o Create examples of the skill/concept and explain. o Write about a real-life use of this math concept or skill. o Connect the concept/skill to concepts/skills you already learned and use. o Reflect on your understanding of this concept/skill on a scale of 1-5 and explain. o Create a K-W-L chart International/ Global Activities- https://populationeducation.org/teacher-resources/ Scholastic http://teacher.scholastic.com/max/index.htm Kindergarten Math https://www.education.com/activity/kindergarten/math/	Fact Fluency Resources: ● https://www.factmonster.com/math/flashcards ● https://kahoot.com/welcomeback/ ● https://quizlet.com/ ● https://www.socrative.com/ ● https://www.funbrain.com/games/math-baseball ● https://www.multiplication.com/games/all-games ● https://mathfactspro.com/math-fact-fluency-game/ Math Fluency Classroom Ideas: ● https://onestopteachershop.com/2015/06/5-ways-to-make-fact-fluency-fun.html ● https://www.weareteachers.com/15-fun-ways-to-practice-math/ Resources https://njctl.org https://www.engageny.org/ https://www.illustrativemathematics.org/content-standards http://www.k-5mathteachingresources.com/ https://www.mathplayground.com/

Instructional Best Practices and Exemplars
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8.1.2.C.1 Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

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8.1.2.D.1 Develop an understanding of ownership of print and non-print information.

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- Leveled Homework
- Extension Activities
- Today's Challenge

Unit 4 Grade K				
Content & Practice Standards		**Critical Knowledge & Skills**	**Resources**	**Days**
■ K.CC.A.1. Count to 100 by ones and by tens. *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Number names and the count sequence up to 100 Students are able to: • count orally by ones up to 100. • count orally by tens up to 100. Learning Goal 1: Count to 100 by ones and by tens.	*Problems should be embedded in daily lessons throughout the school year.*	Repeated
■ K.OA.A.5. Demonstrate fluency for addition and subtraction within 5 (by the end of Kindergarten). *(benchmarked)	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • add and subtract within 5 with accuracy and efficiency. Learning Goal 2: Fluently add and subtract within 5.	*Problems should be embedded in daily lessons throughout the school year.*	Repeated
☐ 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).*	MP.7 Look for and make use of structure.	Concept(s): • Orientation does not alter attributes or size. • Shapes may have sides of unequal or equal length. • Shapes may or may not have the same number of sides or 'corners'. Students are able to: • compare two- and three- dimensional shapes in different sizes and in different orientations and identify similarities and differences. • compare parts of two- and three-dimensional shapes [e.g. number of sides, number of vertices (*corners*)]. • compare attributes of two- and three-dimensional shapes [e.g. sides have equal length.] • use informal language to describe similarities, differences, parts, and other attributes when comparing two-and three-dimensional shapes, in different sizes and orientations. Learning Goal 3: Use informal language to describe similarities,	Ready Math Lesson 31 Compare Shapes	

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		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.		
☐ K.G.B.5. Model shapes in the world by building shapes from components *(e.g., sticks and clay balls)* and drawing shapes.	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): • Basic shapes exist in real world objects. Students are able to: • recognize basic shapes in the real world. • use objects (clay, sticks, etc) to model shapes. • model shapes in the world by drawing shapes. Learning Goal 4: Model shapes in the world by building and drawing shapes.	Ready Math Lesson 32 Build 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?"*	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): • Shapes can be combined to make larger shapes. Students are able to: • compose simple shapes to form larger shapes. Learning Goal 5*:* Compose simple shapes to form larger shapes.	Ready Math Lesson 32 Build Shapes	
■ 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	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Numbers from 11 to 19 can be represented as one group of ten *ones* and another group containing fewer than ten *ones.* Students are able to: • compose and decompose numbers from 11 to 19 into a group of ten *ones* and another group of one(s). • use the term *ones* to describe the number of objects in each group. • record each composition or decomposition using objects and drawings.		Repeated

Unit 4 Grade K				
Content & Practice Standards		**Critical Knowledge & Skills**	**Resources**	**Days**
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)		• record each composition or decomposition by a drawing or equation. Learning Goal 6*:* 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.		

Unit 4 Kindergarten What This May Look Like	
School/District Formative Assessment Plan	**School/District Summative Assessment Plan**
• iReady Assessments • Student Conferencing • Observation Checklist • Anecdotal Notes • Homework • Running Records • Student Self-Evaluations • Short constructed response questions • Multiple choice questions • Academic/Domain specific vocabulary • Quizzes • Math Journal • Exit ticket • Accountable talk	• Unit Benchmark • Chapter Tests • iReady Assessments • State Assessments

Focus Mathematical Concepts

Common Misconceptions:

K.CC.1 Students who confuse the sequence of numbers (ex. 1,4,7,3,9, 2), skip numbers (ex. 1,2,3,5,6,7,9…) or repeat numbers (1,2,3,4,2,3,4) need more experience counting within a smaller range of numbers. Students should be fluent within a range before increasing the range. Words for the teen numbers may be confusing since they do not follow the pattern of other decade numbers (ex. Fourteen vs. twentyfour). Provide more practice with reciting teen numbers and connecting the number name with the written numeral. Focus on oral patterns such as the sequence of the ones place digits in the twenties is the same as the sequence of the ones place as digits in the thirties. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32, 33, 34, 35, 36, 37, 38, 39

K.OA.5 Students who cannot give a correct response in a reasonable amount of time (3-4 seconds) or are depending on counting on their fingers have not developed fluency with these facts. An important prerequisite of adding and subtracting is being able to count. Students who continue to count from 1 or struggle with counting on need practice with rote counting as well as more experience with concrete materials and drawings. Only when they are ready should they work with making explicit connections to expressions and equations and basic facts. Begin with strategies such as counting on 1 or 2. Help students to see the pattern of what happens when they add zero. Explore with doubles facts (1+1, 2+2). The sums to 5 present opportunities to think about decomposing and added to make the sum 2+2+1. Subtraction facts are usually more difficult for students to master and require more concrete experiences with subtraction problem situations and concrete connections to related addition facts.

K.G.4 Kindergarten may not realize that triangles can be inverted or rotated. Some children may recognize the triangle shown below on the left as a triangle because it has a flat bottom but may believe the triangle on the right is not a triangle. Students may decide to name a triangle based on perception, not reasoning.

Kindergartners may not consider the properties of two-dimensional shapes and may believe the shapes below are rectangles.

With numerous experiences and discussions using a variety of shapes, students can correct the misconceptions and learn to identify triangles and rectangles of any form, size, or orientation.

K.G.5 Some students may confuse the name of a two-dimensional shape with a related three-dimensional shape or the shape of its face. For example, students might call a cube a square. While exploring with two-dimensional flat shapes, start by using flat paper.

K.NBT.1 Kindergarten students have several new concepts with which to grapple as part of this standard including the notion of 10 ones being grouped together. Watch for those who struggle with this important place value concept. The concept that 1 group of 10 ones and some more ones can represent the same idea as the number they originally counted will be a stretch for some students, and they will need many opportunities to compose groups of 10 with concrete materials. The other concept that may present a challenge is the teen number names. A group of 10 and one more has the name “eleven”; a group of 10 and two more is called “twelve”; a group of 10 and three more is called “thirteen.” Students entering kindergarten with little number experience may need much more practice with the representations and connecting representations to the number names.

Number Fluency

K.OA.A.5 Add and Subtract with Ten

District/School Tasks	District/School Primary and Supplementary Resources

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• Math Storytelling
• Think-Write-Pair-Share
• Prompts use successful pre-writing strategies such as:
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	● https://www.socrative.com/
	● https://www.funbrain.com/games/math-baseball
	● https://www.multiplication.com/games/all-games
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	Math Fluency Classroom Ideas:

○ Create examples of the skill/concept and explain. ○ Write about a real-life use of this math concept or skill. ○ Connect the concept/skill to concepts/skills you already learned and use. ○ Reflect on your understanding of this concept/skill on a scale of 1-5 and explain. ○ Create a K-W-L chart International/ Global Activities- https://populationeducation.org/teacher-resources/ Scholastic http://teacher.scholastic.com/max/index.htm Kindergarten Math https://www.education.com/activity/kindergarten/math/	● https://onestopteachershop.com/2015/06/5-ways-to-make-fact-fluency-fun.html ● https://www.weareteachers.com/15-fun-ways-to-practice-math/ Resources https://njctl.org https://www.engageny.org/ https://www.illustrativemathematics.org/content-standards http://www.k-5mathteachingresources.com/ https://www.mathplayground.com/

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