BUTLER SCHOOL DISTRICT

Grade K Mathematics Curriculum

Authored by:
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Adapted from:
New Jersey Student Learning Standards
New Jersey Department of Education Instructional Units for Mathematics

Reviewed by:
Dr. Daniel R. Johnson, Superintendent
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Butler School District
34 Bartholdi Avenue
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VISION

The Butler School District's Mathematics Department's objective is to prepare students to think critically, innovate, communicate, and collaborate in an ever-changing world. The Mathematics curriculum provides students with quality, rigorous instruction to help them become better **problem solvers, troubleshooters, and analytical thinkers**. The rich, educational experience provided within the Butler School District will produce young adults with the foundation and expertise they need for the future. It is the goal to challenge each student to develop and extend mathematical proficiency through highest quality mathematics teaching and standard-based assessments that meet the learning needs of each student. Butler Mathematics students will become individuals who persevere in their pursuit of lifelong learning through a culture that appreciates the beauty and usefulness of math.

As a result of a Butler Mathematics education, students will be able to…
- Synthesize mathematical skills across disciplines
- Develop into confident mathematicians
- Learn at their own pace and advance their understanding in a variety of ways
- Collaborate with others and contribute productively and articulately
- Act responsibly and be accountable for actions, in person and online
- Effectively approach, analyze, plan, and apply appropriate strategies for problem solving in ambitious contexts with accommodations for those who need it.
- Persevere through difficult situations and tasks and maintain a growth mindset despite adversity.
- Draw on knowledge from a wide variety of mathematical topics with flexibility to approach the same problem from different mathematical perspectives or represent the mathematics in different ways.
- Evaluate situations, draw logical conclusions, and develop, describe and apply solutions.
- Construct and support arguments.
- Evaluate their own reasoning and critique the reasoning of others.
- Assess the reasonableness of a solution with respect to the given construct or problem context.
- Use effective communication to engage in peer collaboration, reflecting on whether or not a solution is viable.
- Create appropriate representations of mathematical situations across a variety of mediums. These models will support the student's ability to demonstrate and explain their mathematical understanding.
- Use mathematical tools to explore and deepen their understanding of mathematical concepts.
- Make effective choices regarding the use of any available tools.
- Make appropriate use of technology as a tool that is constantly changing and evolving.
- Attend to precision in their mathematical calculations and in their communication.
- Calculate accurately and efficiently and express numerical answers with a degree of precision that is appropriate to the given context.

- Develop precision in their use of mathematical language.
- Look closely to determine patterns and structures within mathematics.
- Make meaningful connections between their knowledge from previous experiences and the content they are currently exploring.
- Develop deep understandings of mathematical concepts such that these understandings become applicable building blocks for future learning.
- Use their mathematical understandings to make generalizations that apply to various mathematical circumstances.
- Identify patterns in mathematics that can be used to solve problems that are challenging relative to their learning comfort zone.
- Use generalizations to increase the efficiency and manageability of their work.
- Demonstrate growth mindset and grit in effectively approaching ever-rigorous problem solving.
- Apply appropriate strategies with differentiated levels of support.
- Be confident in participating in higher level discussions that will assess and advance the understanding of concepts.
- Learn mathematics through exploring and solving contextual and mathematical problems

COURSE OVERVIEW

The fundamental purpose of this course is to give Kindergarten student's an understanding of mathematical concepts and a solid mathematical foundation. The Standards for Mathematical Practice are incorporated in each unit to ensure students are developing procedural fluency, problem solving skills, and productive dispositions towards Mathematics.

GOALS

New Jersey Student Learning Standards Mathematics
New Jersey Department of Education Instructional Units for Mathematics

ASSESSMENT

Student learning will be assessed through a variety of formative, summative, benchmark, and alternative assessments.

SCOPE AND SEQUENCE
(*Pacing Guide*)

Unit of Study	Estimated Time
Number Concepts and Counting to 10	7 weeks

Counting to 20, Addition and Subtraction	11 weeks
Count, Compose, and Compare Numbers	8 weeks
Represent Number Concepts and Model with Shapes	8 weeks

AFFIRMATIVE ACTION COMPLIANCE STATEMENT
The Butler Public Schools are committed to the achievement of increased cultural awareness, respect, and equity amongst our students, teachers, and community. We are pleased to present all pupils with information pertaining to possible career, professional, or vocational opportunities which in no way restricts or limits options on the basis of race, color, creed, religion, sex, ancestry, national origin, or socioeconomic status.

INTEGRATED ACCOMMODATIONS AND MODIFICATIONS
Students with IEPs, 504s, and/or Students at Risk of Failure Students read authentic texts and write authentic pieces at their independent and instructional reading levels. Individualized feedback is provided through conferences and small groups. The teacher utilizes visual and multi-sensory methods of instruction in addition to assistive technology when needed. Students are provided with graphic organizers and other scaffolded material. Modification of content and product may be deemed necessary based on student needs. Students are provided with testing accommodations and authentic assessments.

Gifted & Talented Students Students read authentic texts and write authentic pieces at their independent and instructional reading levels. Individualized feedback is provided to the student through conferences and small groups. Students are engaged through inquiry-based instruction to develop higher-order thinking skills. Activities are developed based on student interests and student goals. Students engage in real-world projects and scenarios.

English Language Learners Students read authentic texts and write authentic pieces at their independent and instructional reading levels. Individualized feedback is provided to students through conferences and small groups. Students are pre-taught vocabulary terms and concepts. Teachers engage students through visual learning, including the use of graphic organizers. Teachers use cognates to increase comprehension. The teacher models tasks and concepts, and pairs students learning English with students who have more advanced English language skills. Scaffolding is provided including word walls, sentence frames, think-pair-share, cooperative learning groups, and teacher think-alouds.

21ST CENTURY THEMES & SKILLS
Embedded in many of our units of study and problem based learning projects are the 21st Century Themes as prescribed by the New Jersey Department of Education. These themes are as follows:

- Global Awareness
- Financial, Economic, Business, and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy

CURRICULUM ADDENDA FOR SPECIAL EDUCATION

This curriculum can be both grade and age appropriate for special education students and serves as a guide for the special education teacher in line with the district's written philosophy of special education, as stated within Policy #6700 concerning Programs for Educationally Disabled Students. Based on the Child Study Team evaluation and consultation with the parent and classroom teacher, an individualized education plan may include modifications to content, instructional procedures, student expectations, and targeted achievement outcomes of this curriculum document in accordance with the identified needs of an eligible student. This educational plan will then become a supplement guide that the classroom teacher, parent, and Child Study Team will use to measure the individual student's performance and achievement.

CURRICULUM ADDENDA FOR ENGLISH LANGUAGE LEARNERS

This curriculum guide is appropriate and is implemented for all students according to age and grade, and is in line with the district's written philosophy of English language acquisition concerning Bilingual Instruction and English as a Second Language Programs. In accordance with the New Jersey Administrative Code 6A:15, the contents herein provide equitable instructional opportunities for English Language Learners to meet the New Jersey Student Learning Standards and to participate in all academic and non-academic courses. Students enrolled in a Bilingual and/or an ESL program may, in consultation with the classroom teacher and Bilingual and/or ESL teacher, receive modification to content, instructional procedures, student expectations and targeted achievement outcomes of this curriculum document in accordance with the students developmental and linguistic needs.

DIVERSITY AND INCLUSION

In alignment with the 2020 NJSLS, the Mathematics Curriculum materials will:

Cultivate respect towards minority groups to foster appreciation of their differences as well as their contributions to the advancement of mathematics

Analyze and appreciate the diverse contributions made in the past (scientifically, economically, politically, and socially) at both the state and federal level as exemplified through mathematics

Examine grade-level texts and resources that simultaneously highlight mathematics as well as the contributions made to it by those of different genders, ethnicities, and abilities.

Employ mathematics as a means of communication — whether in regard to empathy, inclusivity, or advocacy — in an effort to creatively inspire solutions for those with specific needs.

Engage in authentic learning experiences that motivate the acquisition and application of varied perspectives in mathematics

Facilitate the ability to communicate effectively through mathematics while applying content knowledge, interdisciplinary connections, and thinking skills to do so.

Foster active student participation in an inclusive culture that honors mathematicians of all genders, ethnicities, and abilities.

Analyze and develop an understanding of how scientific, economic, political, social, and cultural aspects of society influence new technological and mathematical processes.

Reflect on both personal and non-personal experiences aimed to promote empathy and inclusivity for all regardless of our differences.

UNIT 1
Number Concepts and Counting to 10
UNIT SUMMARY
Unit 1 focuses on counting and the relationship between numbers and quantities. Learners count by ones up to ten and say the number name for each object when counting up to ten objects. They come to understand that, when counting, the last number tells the total number of objects regardless of their order. Learners represent numbers of objects, including the absence of objects (0), with written numbers and answer 'how many' questions about a group of objects arranged in lines, rectangles, arrays, and circles. Also in this unit, learners use their counting experiences to develop an understanding of addition and subtraction within 5. They represent addition and subtraction within 5 using multiple strategies including using objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations. Throughout the unit, learners use concrete objects to count and to represent addition and subtraction. These concrete objects support learners' development of spatial reasoning. They recognize and correctly name two-dimensional shapes regardless of the orientation and size of objects. By describing objects in the environment using names of shapes and describing the relative positions of objects, learners extend their spatial reasoning skills. Note: Double asterisks (**) indicate that the example(s) included within the New Jersey Student Learning Standard may be especially informative when considering the Student Learning Objective.
NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS
K.CC.A.1 Count to 100 by ones and by tens.

K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

K.CC.B.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.

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.

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.

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, behind,* and *next to.*

K.G.A.2 Correctly name shapes regardless of their orientations or overall size. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.

INTERDISCIPLINARY CONNECTIONS

New Jersey Student Learning Standards for English Language Arts:
RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
RL.K.4. Ask and answer questions about unknown words in a text.
SL.K.1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
New Jersey Student Learning Standards for Science- 2020:
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
New Jersey Student Learning Standards: Career Readiness, Life Literacies and Key Skills (2020)
9.4.2.CI.1: Demonstrate openness to new ideas and perspectives

9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem
9.4.2.CT.3: Use a variety of types of thinking to solve problems
9.4.2.GCA:1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals
9.4.2.IML.2: Represent data in a visual format to tell a story about the data
2020 New Jersey Student Learning Standards – Computer Science and Design Thinking
8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.
8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.4: Break down a task into a sequence of steps.
8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

21st CENTURY LIFE AND CAREER STANDARDS

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success.

1. Act as a responsible and contributing community member and employee.
2. Attend to financial well-being.
3. Consider the environmental, social and economic impacts of decisions.
4. Demonstrate creativity and innovation.
5. Utilize critical thinking to make sense of problems and persevere in solving them.
6. Model integrity, ethical leadership and effective management.
7. Plan education and career paths aligned to personal goals.
8. Use technology to enhance productivity, increase collaboration and communicate effectively.
9. Work productively in teams while using cultural global competence.

9.1: Personal Financial Literacy	9.2: Career Awareness, Exploration & Preparation, and Training	9.3: Career and Technical Education
A. Civic Responsibility	A. Career Awareness (K-2)	A. Agriculture
B. Financial Institutions	B. Career Awareness and Planning (3-5)	B. Architecture
C. Financial Psychology	C. Career Awareness and Planning (6-8)	C. Arts,A/V, Technology
D. Planning and Budgeting	D. Career Awareness and Planning (9-12)	D. Business Management
E. Risk Management and Insurance		E. Education
F. Civic Financial Responsibility		F. Finance
G. Credit Profile		G. Government
H. Economic and Government Influences	**9.4 Life Literacies and Key Skills**	H. Health Science
	A. Creativity and Innovation	I. Hospital & Tourism
		J. Human Services
		K. Information Tech.
		L. Law and Public Safety
		M. Manufacturing
	B Critical Thinking and Problem-solving	N. Marketing
I. Credit and Debt Management		O. Science, Technology,

	C. Digital Citizenship D. Global and Cultural Awareness E. Information and Media Literacy F. Technology Literacy	P.	Engineering & Math Trans./Logistics

TECHNOLOGY STANDARDS

8.1: Computer Science A. Computing systems B. Networks and the Internet C. Impacts of Computing D. Data & Analysis E. Algorithms & Programming	**8.2 Design Thinking** A. Engineering Design B. Interaction of Technology and Humans C. Nature of Technology D. Effects of Technology on the Natural World E. Ethics & Culture

ENDURING UNDERSTANDINGS	**ESSENTIAL QUESTIONS**
Students will understand that: ● there is a relationship between the numbers and quantities. ● when counting, each object has one and only one number name and each number name is paired with one and only one object (one-to-one correspondence). ● when counting, the last number name said tells the number of objects counted. ● the number of objects is the same regardless of the order in which they were counted. ● each successive number name refers to a quantity that is one larger. ● Students will understand that: ● "greater than" means the amount is more; "less than" means the amount is less. ● a numeral stands for number of concrete object	● Why do we need to count? ● How do we count? ● How can we compare two numbers?

STUDENT LEARNING OBJECTIVES (Students are learning to / Students are learning that)

Students are learning to/that…
● count by ones to 10
● count on from a number other than 1 to 10
● write numbers 0 to 10

- represent a number of objects with a written number from 1 through 10
- zero represents a count of no objects
- when counting, each object is paired with only one number name
- say the number name for each object in a group up to 10 objects when counting
- when counting a set of objects up to 10, the last number tells the total number of objects
- after counting a set of objects up to 10, the total is the same even when the arrangement or order is changed
- when given a number between 0 and 10, the next number is one larger than the given number
- count out the correct number of objects when given a number up to 10
- answer "how many" questions about a group of objects up to 10 in a line, rectangular array, and circle by counting
- represent addition within 5 in a variety of ways (e.g., objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations)
- represent subtraction within 5 in a variety of ways (e.g., objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations)

SUGGESTED ACTIVITIES

The students will…

- 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
- Use ten frames for addition and subtraction
- Work in math centers for sorting, patterns, number sequencing
- ST Math, Boom Cards, Google Classroom Assignments
- Daily Math Activities: Number of the Day, Attendance, and Weather Observation Routines
- Supplemental lessons
- Possible Game   Materials:
    - Number Cards 0-10
    - Number Puzzles 0-10
    - Number Card/Picture Math 0-10
    - Number Play-doh Mats
    - Standard Dice with Dots or Numerals on the sides
    - Counters (i.e. pennies, cubes, etc.)
    - Roll and Write Activities
    - I Have…Who Has? 0-10 Cards (Numbers should also be represented within the

ten-frame.)
- ○ Pattern Blocks
- ○ Pattern Block Templates
- ○ 3-Dimensional Shape Blocks
- ○ I Have…Who Has? Shape Cards
- ○ Domino Math
- ● Literacy: Literacy Links suggested in Everyday Math, various books about counting ie; <u>Five Little Monkeys, Ten Timid Ghosts, Grandma's Button Box</u>
- ● Writing: Poem Five Little Pumpkins
- ● Social Studies: Using old magazines and newspapers, students will look for pictured objects with numbers that we use in our daily lives. Have them cut out the pictures and paste them onto a sheet of paper to form a collage.
- ● Science: AIMS activities, Life cycles of pumpkins and apples, measurement, graphing, sorting and counting, focus on a number such as
five. Take students outdoors where they can find and collect things from
nature (leaves, stones, sticks, etc.).

EVIDENCE OF LEARNING

Formative Assessments: Classroom Discussion Exit Slip Checklists Peer Assessment Vocabulary Quizzes Rubrics Participation and teacher observation Mini Whiteboard Responses Think-Pair-Share Concept Map Classroom Poll	**Summative Assessment:** Unit Tests End-of-Book Test
Benchmark Assessment: Star 360 Benchmark Unit Benchmarks ESGI Assessments	**Alternative Assessments:** 1 on 1 Verbal Evaluations Projects Dry Erase Activities

INSTRUCTIONAL RESOURCES

Core Instructional Resource: EnVision Mathematics	**Teacher Created Materials** Nearpod presentations	**Supplemental Resources:** ST Math Choice Boards Google Classroom Assignments

INTEGRATED ACCOMMODATIONS AND MODIFICATIONS

Special Education:
Provide modified notes and access to extra copies online
Provide oral reminders and check student work during independent work time

Model skills/techniques to be mastered
Check and sign assignment planner
Preferential seating
Pair visual prompts with verbal presentations
Modified or scaffolded homework and classwork
Extended time as needed
Provide graphic organizers and study guides

English Learners:
Provide scaffolded assignments and assessments
Pair visual prompts with visual presentations
Check and sign assignment planner
Native Language translation (peer, online assistive technology, translation device, bilingual dictionary)
Extended time for assignment and assessment as needed
Highlight key vocabulary
Use graphic organizers
Provide verbal and written directions
Preferential seating with a English-speaking peer

At Risk of Failure:
Check and sign assignment planner
Encourage class participation and reinforce skills
Model skills and assignments
Extended to time to complete class work
Preferential seating
Provide extra help outside of class and 1:1 instruction when needed
Communicate regularly with students' other teachers
Provide positive feedback for tasks well done
Encourage student to proofread assessments and projects and ask for teacher proofreading of large writing assignments

Gifted and Talented:
Pose higher-level thinking questions
Provide higher level reading and writing materials for literacy based activities
Probe student to extend thinking beyond the text or connect two or more texts
Provide alternate or project-based assessments and assignments

Students with 504 Plans
Provide extended time as needed
Modify length of writing assignment
Provide short breaks within the lesson
Provide scaffolding for students
Utilize graphic organizers

UNIT 2
Counting to 20, Addition and Subtraction
UNIT SUMMARY

In this unit, students will continue to develop an understanding of number names and the count sequence. They extend the count sequence to 20, starting at various numbers and represent up to 20 objects with written numbers. Counting objects in a scattered arrangement is introduced in this unit. Learners demonstrate spatial reasoning and understanding of the count sequence to answer "how many" questions about a group of up to 10 scattered objects. They classify objects into given categories, find totals for each category and compare numbers up to 10. Learners also determine whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.

Throughout the unit, learners use concrete objects to count and to represent addition and subtraction. Addition and subtraction, including solving word problems using objects and drawings, is extended to up to 10 objects. Learners begin decomposing numbers less than or equal to 5 into pairs in multiple ways using objects or drawings. This leads them towards building fluency (accuracy and efficiency) for addition and subtraction within 5.

To extend spatial reasoning skills, learners describe objects in the environment using names of shapes and describe their relative positions. They identify and describe both two and three-dimensional shapes, recognizing that two dimensional shapes are flat, and three-dimensional shapes are solid.

NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS

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

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.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

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

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.

K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.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).

K.OA.A.5 Demonstrate fluency for addition and subtraction within 5.

K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. Note: Limit category counts to be less than or equal to 10.

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, behind,* and *next to.* Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.

K.G.A.2 Correctly name shapes regardless of their orientations or overall size.

K.G.A.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

INTERDISCIPLINARY CONNECTIONS

New Jersey Student Learning Standards for English Language Arts:
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K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
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8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

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Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success.

1. Act as a responsible and contributing community member and employee.
2. Attend to financial well-being.
3. Consider the environmental, social and economic impacts of decisions.
4. Demonstrate creativity and innovation.
5. Utilize critical thinking to make sense of problems and persevere in solving them.
6. Model integrity, ethical leadership and effective management.
7. Plan education and career paths aligned to personal goals.
8. Use technology to enhance productivity, increase collaboration and communicate effectively.
9. Work productively in teams while using cultural global competence.

9.1: Personal Financial Literacy	**9.2: Career Awareness, Exploration & Preparation, and Training**	**9.3: Career and Technical Education**
A. Civic Responsibility	A. Career Awareness (K-2)	A. Agriculture
B. Financial Institutions	B. Career Awareness and Planning (3-5)	B. Architecture
C. Financial Psychology	C. Career Awareness and Planning (6-8)	C. Arts,A/V, Technology
D. Planning and Budgeting	D. Career Awareness and Planning (9-12)	D. Business Management
E. Risk Management and Insurance		E. Education
F. Civic Financial Responsibility		F. Finance
G. Credit Profile		G. Government
H. Economic and Government Influences	**9.4 Life Literacies and Key Skills**	H. Health Science
		I. Hospital & Tourism
		J. Human Services
I. Credit and Debt Management	A. Creativity and Innovation	K. Information Tech.
	B Critical Thinking and Problem-solving	L. Law and Public Safety
		M. Manufacturing
		N. Marketing
		O. Science, Technology, Engineering & Math

	C. Digital Citizenship D. Global and Cultural Awareness E. Information and Media Literacy F. Technology Literacy	P. Trans./Logistics

TECHNOLOGY STANDARDS

8.1: Computer Science A. Computing systems B. Networks and the Internet C. Impacts of Computing D. Data & Analysis E. Algorithms & Programming	**8.2 Design Thinking** A. Engineering Design B. Interaction of Technology and Humans C. Nature of Technology D. Effects of Technology on the Natural World E. Ethics & Culture

ENDURING UNDERSTANDINGS	**ESSENTIAL QUESTIONS**
Students will understand that: ● numbers can be decomposed. ● making a sum of 10 will be important to make work easier. ● objects, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations can help one understand problems and find solutions ● teen numbers (11-19) are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. ● the same set of objects can be used to create different patterns. ● some patterns are made up of units that repeat. ● some patterns can be identified by type, e.g., ABABAB. many things can be used to create patterns, e.g., shapes, colors, sounds, letters, and objects.	● Why do we need to add and subtract? ● What happens when we put groups together or add to a group? ● What happens when we take apart groups or take away from a group? ● Why do we compose and decompose numbers? ● Why do we need to identify patterns? ● How do we recognize a pattern?

STUDENT LEARNING OBJECTIVES (Students are learning to / Students are learning that)

Students are learning to/that…

- represent addition within 10 with objects, fingers, mental images, drawings, sounds, acting out problems, verbal explanations, expressions and equations
- represent subtraction within 10 with objects, fingers, mental images, drawings, sounds, acting out problems, verbal explanations, expressions and equations
- represent addition and subtraction word problems within 10 using objects, drawings
- solve addition and subtraction word problems within 10
- decompose numbers less than or equal to 5 in pairs e.g. by using objects or drawings
- record the decomposition of numbers less than or equal to 5 in pairs with a drawing or equation.
- decompose numbers less than or equal to 5 in pairs in more than one way e.g., by using objects or drawings and record the decompositions with a drawing or equation
- represent addition and subtraction within 5 using objects, pictures, numbers, and words (working towards accuracy and efficiency)
- classify objects into given categories
- count the number of objects in each category (up to 10) and sort the categories by their count**
- identify cubes, cones, cylinders and spheres
- describe the attributes of cubes, cones, cylinders and spheres
- describe objects in the environment using names of shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)
- orientation and size do not change the shape (cubes, cones, cylinders and spheres)
- correctly name cubes, cones, cylinders, and spheres
- two-dimensional shapes are "flat" (lying in a plane)
- three-dimensional shapes are "solid"
- identify shapes as two-dimensional or three-dimensional

SUGGESTED ACTIVITIES

The students will…

- 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
- Use ten frames for addition and subtraction
- Work in math centers for sorting, patterns, number sequencing
- ST Math, Boom Cards, Google Classroom Assignments

- Daily Math Activities: Number of the Day, Attendance, and Weather Observation Routines
- Supplemental lessons
- Possible Game   Materials:
  - Number Cards 0-10
  - Number Puzzles 0-10
  - Number Card/Picture Math 0-10
  - Number Play-doh Mats
  - Standard Dice with Dots or Numerals on the sides
  - Counters (i.e. pennies, cubes, etc.)
  - Roll and Write Activities
  - I Have…Who Has? 0-10 Cards (Numbers should also be represented within the ten-frame.)
  - Pattern Blocks
  - Pattern Block Templates
  - 3-Dimensional Shape Blocks
  - I Have…Who Has? Shape Cards
  - Domino Math

EVIDENCE OF LEARNING

Formative Assessments:	**Summative Assessment:**
Classroom Discussion	Unit Tests
Exit Slip	End-of-Book Test
Checklists	
Peer Assessment	
Vocabulary Quizzes	
Rubrics	
Participation and teacher observation	
Mini Whiteboard Responses	
Think-Pair-Share	
Concept Map	
Classroom Poll	
Nearpod Interactive activities	
Benchmark Assessment:	**Alternative Assessments:**
Star 360 Benchmark	1 on 1 Verbal Evaluations
Unit Benchmarks	Projects
ESGI Assessments	Dry Erase Activities

INSTRUCTIONAL RESOURCES

Core Instructional Resource:	**Teacher Created Materials**	**Supplemental Resources:**
EnVision Mathematics	Nearpod Presentations	ST Math Choice Boards Google Classroom Assignments

INTEGRATED ACCOMMODATIONS AND MODIFICATIONS

Special Education:
Provide modified notes and access to extra copies online
Provide oral reminders and check student work during independent work time
Model skills/techniques to be mastered
Check and sign assignment planner
Preferential seating
Pair visual prompts with verbal presentations
Modified or scaffolded homework and classwork
Extended time as needed
Provide graphic organizers and study guides

English Learners:
Provide scaffolded assignments and assessments
Pair visual prompts with visual presentations
Check and sign assignment planner
Native Language translation (peer, online assistive technology, translation device, bilingual dictionary)
Extended time for assignment and assessment as needed
Highlight key vocabulary
Use graphic organizers
Provide verbal and written directions
Preferential seating with a English-speaking peer

At Risk of Failure:
Check and sign assignment planner
Encourage class participation and reinforce skills
Model skills and assignments
Extended to time to complete class work
Preferential seating
Provide extra help outside of class and 1:1 instruction when needed
Communicate regularly with students' other teachers
Provide positive feedback for tasks well done
Encourage student to proofread assessments and projects and ask for teacher proofreading of large writing assignments

Gifted and Talented:
Pose higher-level thinking questions
Provide higher level reading and writing materials for literacy based activities
Probe student to extend thinking beyond the text or connect two or more texts
Provide alternate or project-based assessments and assignments

Students with 504 Plans
Provide extended time as needed
Modify length of writing assignment
Provide short breaks within the lesson
Provide scaffolding for students
Utilize graphic organizers

UNIT 3

Count, Compose and Compare Numbers

UNIT SUMMARY

In this unit, students will continue to develop an understanding of number names and the count sequence by extending the count sequence to 50. They count by tens to 50 and represent up to 20 objects with written numbers. Learners continue to answer "how many" questions about groups of objects, explore the meaning of "equal," and use strategies to identify when the number of objects is equal to, greater than, or less than the number of objects in another group. As learners use written numerals, the abstract representation of groups of objects, more frequently, they understand that written numerals have a value and can be compared.

Learners reinforce their understanding of addition and subtraction within 10, and continue to model addition and subtraction using objects, fingers, mental images, drawings, sounds, acting out, verbal explanations, expressions or equations. They decompose larger numbers (up to 10) into pairs in multiple ways using objects or drawings and discover the number that makes 10 when added to a given number from 1 to 9. These experiences support fluency (accuracy and efficiency) for addition and subtraction within 5.

Foundational place value concepts are introduced in unit 3. Learners explore different ways to compose and decompose numbers 11 through 19 into ten ones and some additional number of ones using both concrete objects and drawings.

Spatial reasoning in this unit engages learners in comparing two and three-dimensional shapes and using informal language to describe their similarities and differences. Learners again classify objects into given categories, count the number of objects in each category, and sort the categories according to the number of objects in each.

NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS

K.CC.A.1 Count to 100 by ones and by tens.
K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
K.CC.B.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.

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.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

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

K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.5 Demonstrate fluency for addition and subtraction within 5.

K.OA.A.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).

K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

K.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.

K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. Note: Limit category counts to be less than or equal to 10

INTERDISCIPLINARY CONNECTIONS

New Jersey Student Learning Standards for English Language Arts:
RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
RL.K.4. Ask and answer questions about unknown words in a text.
SL.K.1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
New Jersey Student Learning Standards for Science- 2020:
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape

of an object helps it function as needed to solve a given problem.

K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

New Jersey Student Learning Standards: Career Readiness, Life Literacies and Key Skills (2020)

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives

9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem

9.4.2.CT.3: Use a variety of types of thinking to solve problems

9.4.2.GCA:1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals

9.4.2.IML.2: Represent data in a visual format to tell a story about the data

2020 New Jersey Student Learning Standards – Computer Science and Design Thinking

8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.

8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.

8.1.2.AP.4: Break down a task into a sequence of steps.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

21st CENTURY LIFE AND CAREER STANDARDS

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success.

1. Act as a responsible and contributing community member and employee.
2. Attend to financial well-being.
3. Consider the environmental, social and economic impacts of decisions.
4. Demonstrate creativity and innovation.
5. Utilize critical thinking to make sense of problems and persevere in solving them.
6. Model integrity, ethical leadership and effective management.
7. Plan education and career paths aligned to personal goals.
8. Use technology to enhance productivity, increase collaboration and communicate effectively.
9. Work productively in teams while using cultural global competence.

9.1: Personal Financial Literacy	9.2: Career Awareness, Exploration & Preparation, and Training	9.3: Career and Technical Education
A. Civic Responsibility	A. Career Awareness (K-2)	A. Agriculture
B. Financial Institutions	B. Career Awareness and Planning (3-5)	B. Architecture
C. Financial Psychology	C. Career Awareness and Planning (6-8)	C. Arts,A/V, Technology
D. Planning and Budgeting	D. Career Awareness and Planning (9-12)	D. Business Management
E. Risk Management and Insurance		E. Education
F. Civic Financial Responsibility		F. Finance
G. Credit Profile		G. Government
		H. Health Science
		I. Hospital & Tourism
		J. Human Services

H. Economic and Government Influences I. Credit and Debt Management	**9.4 Life Literacies and Key Skills** A. Creativity and Innovation B Critical Thinking and Problem-solving C. Digital Citizenship D. Global and Cultural Awareness E. Information and Media Literacy F. Technology Literacy	K. Information Tech. L. Law and Public Safety M. Manufacturing N. Marketing O. Science, Technology, Engineering & Math P. Trans./Logistics

TECHNOLOGY STANDARDS

8.1: Computer Science A. Computing systems B. Networks and the Internet C. Impacts of Computing D. Data & Analysis E. Algorithms & Programming	**8.2 Design Thinking** A. Engineering Design B. Interaction of Technology and Humans C. Nature of Technology D. Effects of Technology on the Natural World E. Ethics & Culture

ENDURING UNDERSTANDINGS	ESSENTIAL QUESTIONS
Students will understand that: ● measurable attributes are a way to compare objects. ● an object may have multiple measurable attributes. ● multiple objects may have the same measurable attribute. ● classifying objects helps to count total numbers. ● objects can be described by their attributes. ● objects can be sorted by their attributes. ● different coins have unique values. ● the relative sizes of the coins are not related to the relative values of the coins (i.e.,a penny is larger than a dime but it is not worth more than a dime.) ● some coins can be exchanged for other coins, e.g., 5 pennies can be exchanged for 1 nickel.	● Why do we need to measure objects? ● What attributes are measurable? ● How do we compare objects? ● Why do we need to classify objects? ● How does sorting help us to count? ● Why do we need money? ● How do we count money? ● Why do we need clocks? ● What are the different types of clocks? ● How do we tell time?

- the value of some coins and bills can be represented by a combination of other coins.
- money amounts can be counted and compared.
- coins can be identified by their color, size, and edge.
- some activities take more time than others to complete.
- a day has three parts that we discuss: morning, afternoon, and evening.
- when time passes, the hour hand and the minute hand move at different rates.
- the hour hand represents the approximate time of the day, the minute hand gives a more exact time.
- events happen in order- we use terms such as first, next, and last.

STUDENT LEARNING OBJECTIVES (Students are learning to / Students are learning that)

Students are learning to/that…

- count by ones to 50
- count by tens to 50
- count on from a number other than 1 to 50
- when counting, each object is paired with only one number name.
- say the number name for each object in a group up to 20 objects when counting
- when counting a set of objects up to 20, the last number tells the total number of objects
- after counting a set of objects up to 20, the total is the same even when the arrangement or order is changed
- when given a number between 0 and 20, the next number is one larger than the given number
- answer "how many" questions about groups of objects up to 20 in a line, rectangular array, and circle by counting
- equal means the same amount
- identify when the number of objects is equal to, greater than, or less than the number of objects in another group by matching or counting the number of objects in both groups
- compare two written numbers between 1 and 10
- solve addition and subtraction word problems within 10

- represent addition and subtraction within 5 using objects, pictures, numbers, and words (working towards accuracy and efficiency)
- decompose numbers less than or equal to 10 in pairs e.g. by using objects or drawings
- record the decomposition of numbers less than or equal to 10 in pairs with a drawing or equation.
- decompose numbers less than or equal to 10 in pairs in more than one way e.g. by using objects or drawings and record the decompositions with a drawing or equation
- find the number that makes 10 when added to a given number from 1 to 9 (e.g. using objects or drawings)
- record the numbers that make 10 with a drawing or equation
- compose ten ones and some further ones (e.g. using objects or drawings) into numbers 11 to 19 and record it with a drawing or equation
- decompose numbers 11 to 19 into ten ones and some further ones (e.g. using objects or drawings) and record it with a drawing or equation
- the numbers 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine more ones
- describe the parts of two- and three- dimensional shapes (e.g., number of sides, faces, vertices/ "corners")
- compare by describing similarities, differences, parts, and other attributes of two- and three-dimensional shapes using informal language
- classify objects into given categories
- count the number of objects in a category and sort the categories of objects by their count

SUGGESTED ACTIVITIES

The students will…

- 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
- Use ten frames for addition and subtraction
- Work in math centers for sorting, patterns, number sequencing
- ST Math, Boom Cards, Google Classroom Assignments
- Daily Math Activities: Number of the Day, Attendance, and Weather Observation Routines
- Supplemental lessons
- Possible Game   Materials:

- Number Cards 0-10
- Number Puzzles 0-10
- Number Card/Picture Math 0-10
- Number Play-doh Mats
- Standard Dice with Dots or Numerals on the sides
- Counters (i.e. pennies, cubes, etc.)
- Roll and Write Activities
- I Have…Who Has? 0-10 Cards (Numbers should also be represented within the ten-frame.)
- Pattern Blocks
- Pattern Block Templates
- 3-Dimensional Shape Blocks
- I Have…Who Has? Shape Cards
- Domino Math

EVIDENCE OF LEARNING

Formative Assessments:	Summative Assessment:
Classroom Discussion	Unit Tests
Exit Slip	End-of-Book Test
Checklists	
Peer Assessment	
Vocabulary Quizzes	
Rubrics	
Participation and teacher observation	
Mini Whiteboard Responses	
Think-Pair-Share	
Concept Map	
Classroom Poll	
Nearpod Interactive activities	
Benchmark Assessment:	**Alternative Assessments:**
Star 360 Benchmark	1 on 1 Verbal Evaluations
Unit Benchmarks	Projects
ESGI Assessments	Dry Erase Activities

INSTRUCTIONAL RESOURCES

Core Instructional Resource:	Teacher Created Materials	Supplemental Resources:
EnVision Mathematics	Nearpod Presentations	ST Math
		Choice Boards
		Google Classroom Assignments

INTEGRATED ACCOMMODATIONS AND MODIFICATIONS

Special Education:

Provide modified notes and access to extra copies online
Provide oral reminders and check student work during independent work time
Model skills/techniques to be mastered
Check and sign assignment planner
Preferential seating
Pair visual prompts with verbal presentations
Modified or scaffolded homework and classwork
Extended time as needed
Provide graphic organizers and study guides

English Learners:
Provide scaffolded assignments and assessments
Pair visual prompts with visual presentations
Check and sign assignment planner
Native Language translation (peer, online assistive technology, translation device, bilingual dictionary)
Extended time for assignment and assessment as needed
Highlight key vocabulary
Use graphic organizers
Provide verbal and written directions
Preferential seating with a English-speaking peer

At Risk of Failure:
Check and sign assignment planner
Encourage class participation and reinforce skills
Model skills and assignments
Extended to time to complete class work
Preferential seating
Provide extra help outside of class and 1:1 instruction when needed
Communicate regularly with students' other teachers
Provide positive feedback for tasks well done
Encourage student to proofread assessments and projects and ask for teacher proofreading of large writing assignments

Gifted and Talented:
Pose higher-level thinking questions
Provide higher level reading and writing materials for literacy based activities
Probe student to extend thinking beyond the text or connect two or more texts
Provide alternate or project-based assessments and assignments

Students with 504 Plans
Provide extended time as needed
Modify length of writing assignment
Provide short breaks within the lesson
Provide scaffolding for students
Utilize graphic organizers

UNIT 4
Represent Number Concepts and Model with Shapes
UNIT SUMMARY
In this unit, students will extend the count sequence to 100. They count by ones and tens and begin at various numbers. Using objects or drawings, learners continue to decompose numbers into pairs in multiple ways. They record numbers that make 10 with drawings and with equations, and demonstrate fluency for addition and subtraction within 5 by accurately and efficiently finding sums and differences. Learners continue to build place value understanding by exploring different ways to compose and decompose numbers 11 through 19 into a ten and ones using objects and drawings. solve addition and subtraction word problems within 10 using objects, drawings, or other strategies. Learners use spatial reasoning to model shapes in the world by building shapes from components (e.g., sticks and clay balls). They compose simple shapes to form larger shapes and describe measurable attributes of various objects. Learners explore early ideas about measurement. They understand that an object can have more than one measurable attribute, compare two objects that have a measurable attribute in common, and determine which object has "more of" or "less of" the attribute.
NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS
K.CC.A.1 Count to 100 by ones and by tens. **K.CC.A.2** Count forward beginning from a given number within the known sequence (instead of having to begin at 1). **K.OA.A.2** Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. **K.OA.A.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). **K.OA.A.4** For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. **K.OA.A.5** Demonstrate fluency for addition and subtraction within 5. **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. **K.G.B.5** Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

K.G.B.6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.

K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. Note: shapes include squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres.

INTERDISCIPLINARY CONNECTIONS

New Jersey Student Learning Standards for English Language Arts:
RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
RL.K.4. Ask and answer questions about unknown words in a text.
SL.K.1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
New Jersey Student Learning Standards for Science- 2020:
K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
New Jersey Student Learning Standards: Career Readiness, Life Literacies and Key Skills (2020)
9.4.2.CI.1: Demonstrate openness to new ideas and perspectives
9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem
9.4.2.CT.3: Use a variety of types of thinking to solve problems
9.4.2.GCA:1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals
9.4.2.IML.2: Represent data in a visual format to tell a story about the data
2020 New Jersey Student Learning Standards – Computer Science and Design Thinking
8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.
8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.4: Break down a task into a sequence of steps.
8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

21st CENTURY LIFE AND CAREER STANDARDS

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success.

1. Act as a responsible and contributing community member and employee.
2. Attend to financial well-being.
3. Consider the environmental, social and economic impacts of decisions.
4. Demonstrate creativity and innovation.
5. Utilize critical thinking to make sense of problems and persevere in solving them.
6. Model integrity, ethical leadership and effective management.
7. Plan education and career paths aligned to personal goals.
8. Use technology to enhance productivity, increase collaboration and communicate effectively.
9. Work productively in teams while using cultural global competence.

9.1: Personal Financial Literacy	**9.2: Career Awareness, Exploration & Preparation, and Training**	**9.3: Career and Technical Education**
A. Civic Responsibility	A. Career Awareness (K-2)	A. Agriculture
B. Financial Institutions	B. Career Awareness and Planning (3-5)	B. Architecture
C. Financial Psychology	C. Career Awareness and Planning (6-8)	C. Arts,A/V, Technology
D. Planning and Budgeting	D. Career Awareness and Planning (9-12)	D. Business Management
E. Risk Management and Insurance		E. Education
F. Civic Financial Responsibility		F. Finance
G. Credit Profile		G. Government
H. Economic and Government Influences	**9.4 Life Literacies and Key Skills**	H. Health Science
I. Credit and Debt Management	A. Creativity and Innovation	I. Hospital & Tourism
	B Critical Thinking and Problem-solving	J. Human Services
	C. Digital Citizenship	K. Information Tech.
	D. Global and Cultural Awareness	L. Law and Public Safety
	E. Information and Media Literacy	M. Manufacturing
	F. Technology Literacy	N. Marketing
		O. Science, Technology, Engineering & Math
		P. Trans./Logistics

TECHNOLOGY STANDARDS

8.1: Computer Science	**8.2 Design Thinking**

A. Computing systems B. Networks and the Internet C. Impacts of Computing D. Data & Analysis E. Algorithms & Programming	A. Engineering Design B. Interaction of Technology and Humans C. Nature of Technology D. Effects of Technology on the Natural World E. Ethics & Culture
ENDURING UNDERSTANDINGS	**ESSENTIAL QUESTIONS**
Students will understand that: ● shapes have positions in the world relative to other things. ● characteristics of shapes give it a name. ● shapes in the world can be built with components such as sticks and clay balls. ● shapes in the world can be drawn. ● shapes can be formed by composing other shapes.	● What characteristics of a shape help us to name it? ● How does knowing the name of shapes help us? ● Why do we need to know positions of shapes? ● Why do we need to identify shapes? ● Why would we compose shapes?

STUDENT LEARNING OBJECTIVES (Students are learning to / Students are learning that)

Students are learning to/that…

- count by ones to 100
- count by tens to 100
- count on from a number other than 1 to 100
- solve addition and subtraction word problems within 10
- decompose numbers less than or equal to 10 in pairs e.g. by using objects or drawings
- record the decomposition of numbers less than or equal to 10 in pairs with a drawing or equation
- decompose numbers less than or equal to 10 in pairs in more than one way e.g. by using objects or drawings and record the decompositions with a drawing or equation
- find the number that makes 10 when added to a given number from 1 to 9 (e.g. using objects or drawings)
- record the numbers that make 10 with a drawing or equation
- represent addition and subtraction within 5 with accuracy and efficiency
- compose and record numbers from 11 to 19 into a ten and some further ones (e.g. using objects or drawings)
- decompose and record numbers 11 to 19 into a ten and some further ones (e.g. using objects or drawings)
- the numbers 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones

- model shapes in the world by building shapes from components (e.g. sticks and clay balls)
- model shapes in the world by drawing shapes
- simple shapes can join to compose larger shapes**
- compose simple shapes to form larger shapes**
- analyze two- and three-dimensional shapes in different sizes and orientations using informal language
- a vertex or "corner" is where two sides meet
- some shapes (squares, triangles, rectangles, hexagons) have sides.
- the length of sides is an important attribute when naming shapes
- identify and describe sides of shapes using informal language
- analyze and describe the attributes of two dimensional shapes (e.g. number of sides, vertices/"corners") using informal language
- compare by describing similarities, differences, parts, and other attributes of two and three-dimensional shapes using informal language
- objects have measurable attributes, such as length or weight.
- describe measurable attributes of objects, such as length or weight.
- describe several measurable attributes of a single object

SUGGESTED ACTIVITIES

The students will…

- K.CC.A.1 Counting by Tens
- K.G.B.4 Alike or Different Game
- K.NBT.A.1 What Makes a Teen Number
- Use ten frames for addition and subtraction
- Work in math centers for sorting, patterns, number sequencing
- ST Math, Boom Cards, Google Classroom Assignments
- Daily Math Activities: Number of the Day, Attendance, and Weather Observation Routines
- Supplemental lessons
- Possible Game   Materials:
    - Number Cards 0-10
    - Number Puzzles 0-10
    - Number Card/Picture Math 0-10
    - Number Play-doh Mats
    - Standard Dice with Dots or Numerals on the sides
    - Counters (i.e. pennies, cubes, etc.)
    - Roll and Write Activities
    - I Have…Who Has? 0-10 Cards (Numbers should also be represented within the ten-frame.)
    - Pattern Blocks
    - Pattern Block Templates

- ○ 3-Dimensional Shape Blocks
- ○ I Have…Who Has? Shape Cards
- ○ Domino Math

EVIDENCE OF LEARNING

Formative Assessments:	**Summative Assessment:**
Classroom Discussion Exit Slip Checklists Peer Assessment Vocabulary Quizzes Rubrics Participation and teacher observation Mini Whiteboard Responses Think-Pair-Share Concept Map Classroom Poll Nearpod Interactive activities	Unit Tests End-of-Book Test
Benchmark Assessment:	**Alternative Assessments:**
Star 360 Benchmark Unit Benchmarks ESGI Assessments	1 on 1 Verbal Evaluations Projects Dry Erase Activities

INSTRUCTIONAL RESOURCES

Core Instructional Resource:	**Teacher Created Materials**	**Supplemental Resources:**
EnVision Mathematics	Nearpod Presentations	ST Math Choice Boards Google Classroom Assignments

INTEGRATED ACCOMMODATIONS AND MODIFICATIONS

Special Education:
Provide modified notes and access to extra copies online
Provide oral reminders and check student work during independent work time
Model skills/techniques to be mastered
Check and sign assignment planner
Preferential seating
Pair visual prompts with verbal presentations
Modified or scaffolded homework and classwork
Extended time as needed
Provide graphic organizers and study guides

English Learners:
Provide scaffolded assignments and assessments
Pair visual prompts with visual presentations

Check and sign assignment planner
Native Language translation (peer, online assistive technology, translation device, bilingual dictionary)
Extended time for assignment and assessment as needed
Highlight key vocabulary
Use graphic organizers
Provide verbal and written directions
Preferential seating with a English-speaking peer

At Risk of Failure:
Check and sign assignment planner
Encourage class participation and reinforce skills
Model skills and assignments
Extended to time to complete class work
Preferential seating
Provide extra help outside of class and 1:1 instruction when needed
Communicate regularly with students' other teachers
Provide positive feedback for tasks well done
Encourage student to proofread assessments and projects and ask for teacher proofreading of large writing assignments

Gifted and Talented:
Pose higher-level thinking questions
Provide higher level reading and writing materials for literacy based activities
Probe student to extend thinking beyond the text or connect two or more texts
Provide alternate or project-based assessments and assignments

Students with 504 Plans
Provide extended time as needed
Modify length of writing assignment
Provide short breaks within the lesson
Provide scaffolding for students
Utilize graphic organizers