BUTLER SCHOOL DISTRICT

Grade 1 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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Adopted:
BOE approval 8/21

Last Updated:
June 2019

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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 first grade students 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

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**
Strategies for Addition and Subtraction/ Introducing composite two-dimensional shapes	9 weeks
Place Value and More Strategies for Addition and Subtraction/ Time to half hour	9 weeks
Place Value and Two Digit Addition and Subtraction Strategies/Measurement	9 weeks
Place Value Strategies and Composite Shapes	9 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
Strategies for Addition and Subtraction – Unit 1
UNIT SUMMARY
The primary focus of Unit 1 is addition and subtraction. Building upon the counting sequence mastered in Kindergarten, learners begin counting to 120, reading and writing numbers through 50 and representing objects with a written number. Learners build place value understanding as they learn that a ten is a bundle of ten ones and can be used to compose numbers 11 through 19. An important conceptual understanding for their future work in mathematics is the meaning of the equal sign. Learners use this understanding to determine if addition and subtraction equations are true or false. Learners solve word problems using various strategies for addition and subtraction and use equations with an unknown in any position. Introducing composite two-dimensional shapes is essential for expanding geometric skills and concepts from kindergarten. Grade 1 learners move beyond describing objects in the environment using two-dimensional shapes to composing new shapes from composite two-dimensional shapes.
NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS
1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. **.NBT.B.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

a. 10 can be thought of as a bundle of ten ones — called a “ten.”
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

1.OA.B.3 Apply properties of operations as strategies to add and subtract.3 *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* {Students need not use formal terms for these properties}

1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 − 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*

1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.*

1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

INTERDISCIPLINARY CONNECTIONS

Reading/Language Arts

SL.1.1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

SL.1.6. Produce complete sentences when appropriate to task and situation.

L.1.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Science:

NGSS:1-PS4-1 Waves and Their Applications in Technologies for Information Transfer Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

NGSS: 1-PS4-2 Waves and Their Applications in Technologies for Information Transfer Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.

Social Studies:

NJSLS:6.1.4.A.1
Explain how rules and laws created by community, state, and national governments protect the rights of people, help resolve conflicts, and promote the common good. The United States Constitution and Bill of Rights guarantee certain fundamental rights for citizens.

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 B. Financial Institutions C. Financial Psychology D. Planning and Budgeting E. Risk Management and Insurance F. Civic Financial Responsibility	A. Career Awareness (K-2) B. Career Awareness and Planning (3-5) C. Career Awareness and Planning (6-8) D. Career Awareness and Planning (9-12)	A. Agriculture B. Architecture C. Arts,A/V, Technology D. Business Management E. Education F. Finance G. Government H. Health Science I. Hospital & Tourism

G. Credit Profile 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	J. Human Services 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**
● Number sense develops through experience. ● Math students can use the meaning of the equal sign to determine if addition and subtraction equations are true or false. ● Operations create relationships between numbers. ● Analyzing geometric relationships develops reasoning and justification skills. ● A problem solver understands what has been done, knows why the process was appropriate, and can support it with reasons and evidence.	● What kinds of experiences help develop number sense? ● How do I determine the best numerical representation (pictorial, symbolic, objects) for a given situation? ● How do mathematical operations relate to each other? ● How are geometric shapes and objects classified? ● How do I decide what strategy will work best in a given problem situation?

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

- count to 120
- count on from any number within 120
- read numbers within 50
- write numbers within 50
- represent up to 50 objects with a written number
  - 10 can be thought of as a bundle of ten ones called a “ten”
  - the numbers 11 to 19 are made up of one ten and one, two, three, four, five, six, seven, eight, or nine ones
  - represent a word problem using objects, drawings, or equations using a symbol for the unknown
  - solve addition and subtraction word problems within 10 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
  - relate counting to addition
  - relate counting to subtraction
  - apply the commutative and identity properties as strategies to add and subtract
  - a composite shape is a shape built by combining other shapes
  - compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) to create a composite shape
  - compose new shapes from composite shapes

SUGGESTED ACTIVITIES

- Building upon the counting sequence mastered in Kindergarten, begin counting to 120.
- Reading and writing numbers through 50
- Represent objects with a written number.
- Build place value understanding by learning that a ten is a bundle of ten ones and can be used to compose numbers 11 through 19.
- Solve word problems using various strategies for addition and subtraction and use equations with an unknown in any position.
- Introduce composite two-dimensional shapes
- Compose new shapes from composite two-dimensional shapes
- https://www.illustrativemathematics.org/content-standards/1/OA/A/1/tasks/163
- https://tasks.illustrativemathematics.org/content-standards/1/OA/B/3/tasks/1219
- https://tasks.illustrativemathematics.org/content-standards/1/OA/B/4/tasks/1234
- https://www.illustrativemathematics.org/content-standards/1/OA/D/7/tasks/475

- https://tasks.illustrativemathematics.org/content-standards/1/OA/D/8/tasks/991
- https://tasks.illustrativemathematics.org/content-standards/1/NBT/A/1/tasks/680

EVIDENCE OF LEARNING

Formative Assessments:
- Check-In
- Informal Observations
- Mental Math and Reflexes
- Math Journals
- Exit Slips/Slates
- Self-Assessments
- Games
- Questioning

Summative Assessment:
- End of unit test (benchmark)
- Mid-year assessment
- End of year assessment
- End of year mixed facts test

Benchmark Assessment:
Star 360 Benchmark
Unit Benchmarks

Alternative Assessments:
Project
Portfolio

INSTRUCTIONAL RESOURCES

Core Instructional Resource:
Envision Mathematics

Leveled Texts:
- ***Anno's Counting Book*** *by Mitsumasa Anno*
- **Ten Flashing Fireflies** by Philemon Sturges

Supplemental Resources:
Number Grid Counting
- Hundred Board: http://www.mathwire.com/100board/hb2.html
- More Hundred Board Activities: http://www.mathwire.com/100board/hb2.html
- Freckl
- Nearpod
- Kahoot
- Choice Board
- ST Math

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

Place Value and More Strategies for Addition and Subtraction – Unit 2

UNIT SUMMARY

Continuing the counting sequence of Unit 1, learners read and write numbers up to 120. The major focus of Unit 2 is place value of two digit numbers as students learn to use the conceptual understanding of tens and ones in order to compare two-digit numbers. Learners build upon the properties of operations introduced in Unit 1 as they discover the relationship between addition and subtraction, understanding subtraction as an unknown-addend problem. They use this understanding as a strategy to add and subtract numbers within 20. While students develop their repertoire of addition and subtraction strategies, they use them in context with varied word problem situations including adding three whole numbers within 20. Learners continue to work towards fluency when adding and subtracting within 10, and extend their understanding of the equals sign as they apply its meaning to determine whether equations are true or false.

Building upon kindergarten skills of classifying objects into categories and sorting categories by count, grade 1 learners organize, represent and interpret data in up to three categories. Learners answer questions about the data that they have represented, reinforcing their numeracy skills. Learners also tell and write time to the hour.

NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS

1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral

1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.

c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.B 3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.B.3 Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* {Students need not use formal terms for these properties}

1.OA.B.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 − 8 by finding the number that makes 10 when added to 8.

1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 − 4 = 13 − 3 − 1 = 10 − 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12

− 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 − 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*

1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.*

1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.

INTERDISCIPLINARY CONNECTIONS

Reading/Language Arts

SL.1.1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

SL.1.6. Produce complete sentences when appropriate to task and situation.

L.1.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Science

1-PS4-4 Waves and Their Applications in Technologies for Information Transfer
Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*
Performance Expectation

1-LS1-1 From Molecules to Organisms: Structures and Processes
Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.*
Performance Expectation

1-LS1-2 From Molecules to Organisms: Structures and Processes
Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

Social Studies

6.1.4.A.9 Compare and contrast responses of individuals and groups, past and

present, to violations of fundamental rights (e.g., fairness, civil rights, human rights).

6.1.4.A.10 Describe how the actions of Dr. Martin Luther King, Jr., and other civil rights leaders served as catalysts for social change and inspired social activism in subsequent generations.

6.1.4.A.11 Explain how the fundamental rights of the individual and the common good of the country depend upon all citizens exercising their civic responsibilities at the community, state, national, and global levels.

6.1.P.B.1 Develop an awareness of the physical features of the neighborhood/community.

6.1.4.B.1 Compare and contrast information that can be found on different types of maps and determine how the information may be useful.

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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
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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.

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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 B. Financial Institutions C. Financial Psychology D. Planning and Budgeting E. Risk Management and Insurance F. Civic Financial Responsibility G. Credit Profile H. Economic and Government Influences I. Credit and Debt Management	A. Career Awareness (K-2) B. Career Awareness and Planning (3-5) C. Career Awareness and Planning (6-8) D. Career Awareness and Planning (9-12) **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	A. Agriculture B. Architecture C. Arts,A/V, Technology D. Business Management E. Education F. Finance G. Government H. Health Science I. Hospital & Tourism J. Human Services 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**
● Time can be recorded on analog and digital clocks. ● On an analog clock, the hour hand tells the hour, and the minute hand tells the number of minutes after the hour.	• How can time be recorded? • What are analog and digital clocks? ● • How can time to the hour be read and written? ● How can time to the half hour be read and written?

● Some questions can be answered by collecting and analyzing data. ● Data can be represented visually using graphs. ● • Numbers greater than 10 can be represented as groups of tens and ones. ● • Place value can be used to compare and order numbers. ● • For some relationships, mathematical symbols (i.e. > “more than”, < “less than” , and = “equal”) can be used to describe how one set of numbers is related to another set.	● How can picture graphs and bar graphs be used to represent data sets? ● How can numbers greater than 10 be shown, counted, read and written? • What are two-digit numbers? • How can numbers to 100 be compared and ordered?

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

- read numbers up to 120
- write numbers up to 120
- represent objects with a written number in sets within 120 objects
- in a two-digit number, one digit represents the amount of tens and the other digit represents the amount of ones
- the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 are made up of some tens and 0 ones
- compare two two-digit numbers using the meanings of the tens and ones digits
- compare two numbers using the symbols <, >, and =
- represent a word problem using objects, drawings, or equations using a symbol for the unknown
- solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
- apply the associative, commutative and identity properties as strategies to add and subtract
- subtraction can be thought of as an addition problem with an unknown addend
- a related addition problem can be used to solve a subtraction problem
-
- add and subtract within 20 using strategies such as counting on, making ten, and decomposing a number leading to a ten
- add and subtract within 20 using strategies such as relationship between addition and subtraction, and using easier or known sums within 10
- working towards accuracy and efficiency for addition and subtraction within 10, use efficient strategies to add and subtract within 20

- determine if equations involving addition and subtraction within 20 are true or false using the meaning of the equal sign
- determine the missing number (in any position) that makes an equation within 20 true
- determine the missing number (in any position) that makes an equation within 20 true
-
- organize and represent data with up to three categories
- interpret data with up to three categories by stating observations about the data
- ask and answer questions about the total number of data points, the number in each category, and how many more or less are in one category than in another
- tell and write time to the hour using analog and digital clocks
-

SUGGESTED ACTIVITIES

- read and write numbers up to 120.
- use the conceptual understanding of tens and ones in order to compare two-digit numbers
- Build upon the properties of operations
- Discover the relationship between addition and subtraction, understanding subtraction as an unknown-addend problem
- Use addition and subtraction strategies with varied word problem situations including adding three whole numbers within 20.
- Learners continue to work towards fluency when adding and subtracting within 10, and extend their understanding of the equals sign as they apply its meaning to determine whether equations are true or false.
- Organize, represent and interpret data in up to three categories.
- Answer questions about the data that they have represented, reinforcing their numeracy skills.
- Tell and write time to the hour and half hour.

EVIDENCE OF LEARNING

Formative Assessments:	**Summative Assessment:**
• Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Exit Slips/Slates • Self-Assessments • Games	• End of unit test (benchmark) • Mid-year assessment • End of year assessment • End of year mixed facts test
Benchmark Assessment: Star 360 Benchmark Unit Benchmarks	**Alternative Assessments:** Project Portfolio

INSTRUCTIONAL RESOURCES		
Core Instructional Resource: Envision Math	**Leveled Texts:** ***Turtle Splash! Countdown at the Pond*** *by Cathryn Falwell* **Monster Math** by Anne Miranda	**Supplemental Resources:** ● Freckl ● Nearpod ● Boom Cards ● https://tasks.illustrativemathematics.org/content-standards/1/OA/A/1/tasks/2 ● https://tasks.illustrativemathematics.org/content-standards/1/NBT/B/3/tasks/6 ● Choice Board

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
Place Value and Two Digit Addition and Subtraction Strategies - Unit 3
UNIT SUMMARY
The major focus of Unit 3 is demonstrating place value understanding through addition and subtraction strategies. Learners demonstrate understanding of the composition of tens through the use of concrete models or drawings, and become more sophisticated in their use of strategies. They add and subtract within 100, working towards fluency within 10. Learners relate their concrete models and drawings to their strategy and explain the reasoning used. Learners, knowing from Kindergarten that length is a measurable attribute of shapes, measure lengths of objects. They compare the lengths of two objects indirectly and lay multiple copies of a shorter object to measure a longer object. These concrete experiences with measurement build a foundation for measurement in second grade.
NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS
1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method

and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 − 4 = 13 − 3 − 1 = 10 − 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 − 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

INTERDISCIPLINARY CONNECTIONS

Reading/Language Arts

SL.1.1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

SL.1.6. Produce complete sentences when appropriate to task and situation.

L.1.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Science

1-LS1 From Molecules to Organisms: Structures and Processes

1-LS3 Heredity: Inheritance and Variation of Traits

Social Studies

6.1.2.Geo.SV.4: Identify examples of geospatial data (e.g., landmarks on the school grounds, the
spatial location of each student's assigned seat in the classroom, needs more thought).

6.1.2.EconET.1: Explain the difference between needs and wants.

• 6.1.2.EconET.2: Cite examples of choices people make when resources are scarce. Limited resources influence choices.

6.1.2.EconET.3: Describe how supply and demand influence price and output of products. Economic decisions made by individuals and governments should be informed by an effective decision-making process (e.g., saving, spending, acquiring debt, investing).

• 6.1.2.EconET.4: Explain the impact that decisions about savings, debt, and investment can have on individuals' lives.
• 6.1.2.EconET.5: Describe how local and state governments make decisions that affect individuals and the community.

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 B. Financial Institutions C. Financial Psychology D. Planning and Budgeting E. Risk Management and	A. Career Awareness (K-2) B. Career Awareness and Planning (3-5) C. Career Awareness and Planning (6-8)	A. Agriculture B. Architecture C. Arts,A/V, Technology D. Business Management E. Education F. Finance

Insurance F. Civic Financial Responsibility G. Credit Profile H. Economic and Government Influences I. Credit and Debt Management	D. Career Awareness and Planning (9-12) **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	G. Government H. Health Science I. Hospital & Tourism J. Human Services 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**
● Place value can be understood through addition and subtraction strategies. ● Concrete models can represent groups of ten. ● Explaining strategies relates concrete models to addition and subtraction. ● Length is a measurable attribute of shapes. ● Concrete experiences with nonstandard measurement build a foundation for standard measurement.	● How can addition and subtraction strategies relate to place value? ● How can ten be represented concretely? ● How do concrete models relate strategies? ● What is a measurable attribute of shapes? ● What non-standard measurement experiences build standard measurement skills?

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

- sometimes it is necessary to compose tens when adding
- compose tens when adding two-digit numbers, if necessary
- when adding two-digit numbers, one adds tens and tens, ones and ones
- 10, 20, 30, 40, 50, 60, 70, 80, and 90 are multiples of 10
- add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings
- add a two-digit number and a one-digit number within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction
- relate strategies for adding a two-digit and a one-digit number within 100 to a written method and explain the reasoning used to solve

add a two-digit number and a multiple of 10, within 100, using concrete models (e.g., base ten blocks) or drawings

- represent a word problem using objects, drawings, or equations using a symbol for the unknown
  - solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.
  - add and subtract within 20 using strategies such as counting on, making ten, decomposing a number leading to a ten, relationships within addition and subtraction, and using easier or known facts within 10.
  - working towards accuracy and efficiency for addition and subtraction within 10, use efficient strategies to add and subtract within 20.
  - length is measured from one endpoint to another
  - use a third object to compare lengths of two objects that may not be moved
  - order three objects by length
  - the length of an object is the number of same-size length units that span it with no gaps or overlaps
  - express the length of an object as a whole number of length units, by laying multiple copies of a shorter object end to end

SUGGESTED ACTIVITIES

- compose tens when adding
- compose tens when adding two-digit numbers
- adds tens and tens, ones and ones
- use concrete models to add two-digit numbers
- explain the strategies for adding a two-digit and one-digit number within 100
- use concrete models or drawings to add a two-digit and multiple of 10.

- represent a word problem using objects, drawings, or equations using a symbol for the unknown
- measure length from one endpoint to another
- use a third object to compare lengths of two objects that may not be moved
- order three objects by length
- express the length of an object as a whole number of length units, by laying multiple copies of a shorter object end to end

EVIDENCE OF LEARNING

Formative Assessments:

- Check-In
- Informal Observations
- Mental Math and Reflexes
- Math Journals
- Exit Slips/Slates
- Self-Assessments
- Games

Summative Assessment:

- End of unit test (benchmark)
- Mid-year assessment
- End of year assessment
- End of year mixed facts test

Benchmark Assessment:
Star 360 Benchmark
Unit Benchmarks

Alternative Assessments:
Project
Portfolio

INSTRUCTIONAL RESOURCES

Core Instructional Resource:
Envision Mathematics

Leveled Texts:

How Big is a Foot? by Rolf Myller

Measuring Penny by Loreen Leedy

Supplemental Resources:

- Freckl
- Nearpod
- https://tasks.illustrativemathematics.org/content-standards/1/OA/A/1/tasks/2
- https://tasks.illustrativemathematics.org/content-standards/1/NBT/B/3/tasks/6
- Choice Board
- ST Math

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

Place Value Strategies and Composite Shapes - Unit 4

UNIT SUMMARY

The focus of unit 4 is solidifying learners' place value understanding for addition within 100, as well as the use of various strategies to efficiently add and subtract within 20. They apply addition and subtraction strategies to solve word problems and become fluent with adding and subtracting within 10. Learners tell and write time to the half-hour, and partition shapes to develop a foundation for understanding fractions.

Learners extend their geometric understanding from Kindergarten as they identify defining and non-defining attributes of shapes. They extend their understanding of composite two-dimensional shapes to create composite three-dimensional shapes and to compose new shapes from composite three-dimensional shapes.

NEW JERSEY STUDENT LEARNING STANDARDS MATHEMATICS

1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem

1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 − 4 = 13 − 3 − 1 = 10 − 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 − 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.

1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

INTERDISCIPLINARY CONNECTIONS

Reading/Language Arts

SL.1.1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
A. Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
SL.1.2. Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
SL.1.6. Produce complete sentences when appropriate to task and situation.
L.1.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Science:

• 1-ESS1-1 Use observations of the sun, moon, and stars to describe patterns that can be predicted.
• 1-ESS1-2 Make observations at different times of year to relate the amount of daylight to the time of year

Social Studies:

6.1.2.EconEM.1: Describe the skills and knowledge required to produce specific goods and services.
• 6.1.2.EconEM.2: Describe the goods and services that individuals and businesses in the local community produce and those that are produced in other communities.
• 6.1.2.EconEM.3: Identify the ways in which people exchange(d) goods and services today, and in the past (e.g., purchase, borrow, barter)

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

J. Civic Responsibility
K. Financial Institutions
L. Financial Psychology
M. Planning and Budgeting
N. Risk Management and Insurance
O. Civic Financial Responsibility
P. Credit Profile
Q. Economic and Government Influences
R. Credit and Debt Management

9.2: Career Awareness, Exploration & Preparation, and Training

G. Career Awareness (K-2)
H. Career Awareness and Planning (3-5)
I. Career Awareness and Planning (6-8)
J. Career Awareness and Planning (9-12)

9.4 Life Literacies and Key Skills

A. Creativity and Innovation
B Critical Thinking and

9.3: Career and Technical Education

Q. Agriculture
R. Architecture
S. Arts,A/V, Technology
T. Business Management
U. Education
V. Finance
W. Government
X. Health Science
Y. Hospital & Tourism
Z. Human Services
AA. Information Tech.
BB. Law and Public Safety
CC. Manufacturing
DD. Marketing
EE. Science, Technology,

	Problem-solving C. Digital Citizenship D. Global and Cultural Awareness K. Information and Media Literacy L. Technology Literacy	Engineering & Math FF. 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**
● Various strategies can be used to efficiently add and subtract within 20. ● Addition and subtraction strategies can be applied to solve word problems . ● Partitioned shapes can develop a foundation for understanding fractions. ● Shapes have defining and non-defining attributes. ● Composite two-dimensional shapes can create composite three-dimensional shapes. ● New shapes can be composed from composite three-dimensional shapes.	● What strategies increase addition/subtraction fluency within 20? ● How does one determine the needed operation in solving word problems? ● How do partitioned shapes relate to fractions? ● What are defining and non-defining attributes of shapes? ● How do two-dimensional shapes relate to three-dimensional shapes?
STUDENT LEARNING OBJECTIVES (Students are learning to / Students are learning that)	

- add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings
- add a two-digit number and a multiple of 10, within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction
- relate strategies for adding a two-digit and a one-digit number within 100 to a written method and explain the reasoning used to solve
- relate strategies for adding a two-digit number and a multiple of 10, within 100, to a written method and explain the reasoning used to solve.
- when adding two-digit numbers, one adds tens and tens, ones and ones
- sometimes it is necessary to compose tens when adding
- compose tens when adding two-digit numbers, if necessary
- represent a word problem using objects, drawings, or equations using a symbol for the unknown
- solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
- add and subtract within 20 using strategies such as counting on, making ten, decomposing a number leading to a ten, relationships within addition and subtraction, and using easier or known facts within 10
- add and subtract within 10 with accuracy and efficiency
- tell and write time to the hour using analog and digital clocks
- tell and write time to the half-hour using analog and digital clocks
- partition means to split a shape into smaller parts, also called shares
- partition circles and rectangles into two equal shares and describe each share using the word “halves” or the phrase “half of”
- partition circles and rectangles into four equal shares and describe each share using the word “fourths” or the phrase “fourth of”
- decomposing shapes into more equal shares creates smaller shares
- distinguish between defining and non-defining attributes
- build and draw shapes that have particular defining attributes
- a composite shape is a shape built by combining other shapes
- compose three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) to create a composite shape
- compose new shapes from composite shapes

SUGGESTED ACTIVITIES

- add a two-digit number and a one-digit number within 100 using concrete models (e.g., base ten blocks) or drawings

- relate strategies for adding a two-digit and a one-digit number within 100 to a written method and explain the reasoning used to solve

- relate strategies for adding a two-digit number and a multiple of 10, within 100, to a written method and explain the reasoning used to solve.

- represent a word problem using objects, drawings, or equations using a symbol for the unknown

- solve addition and subtraction word problems within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
- add and subtract within 10 with accuracy and efficiency
- tell and write time to the hour using analog and digital clocks
- tell and write time to the half-hour using analog and digital clocks
- partition circles and rectangles into two equal shares and describe each share using the word “halves” or the phrase “half of”
- partition circles and rectangles into four equal shares and describe each share using the word “fourths” or the phrase “fourth of”
- distinguish between defining and non-defining attributes
- build and draw shapes that have particular defining attributes
- compose new shapes from composite shapes
-

EVIDENCE OF LEARNING

Formative Assessments:	**Summative Assessment:**
• Check-In • Informal Observations • Mental Math and Reflexes • Math Journals • Exit Slips/Slates • Self-Assessments • Games • Questioning	• End of unit test (benchmark) • Mid-year assessment • End of year assessment • End of year mixed facts test
Benchmark Assessment: Star 360 Benchmark Unit Benchmarks	**Alternative Assessments:** Project Portfolio

INSTRUCTIONAL RESOURCES

Core Instructional Resource:	**Leveled Texts:**	**Supplemental Resources:**
Envision Math		• Number Grid Counting • Hundred Board: http://www.mathwire.com/100board/hb2.html • More Hundred Board Activities:

	The Shape of Things by Dayle Ann Dodds (Author) and Julie Lacome (Illustrator) **Full House: An Invitation to Fractions** by Dayle Ann Dodds	http://www.mathwire.com/100board/hb2.html ● Freckl ● Nearpod ● Choice Board

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