Unit 1 - Operations and Algebraic Thinking

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

Unit Overview

Enduring Understandings

Understand math as problem solving strategies rather than just computation.
Understand that 100 can be thought of as 10 groups of 10.
Understand that the digits of a 3-digit number represent amounts of hundreds, tens, and ones.
Compare 3-digit numbers using comparison symbols.
Understand 3-digit numbers in word form, expanded form, and standard form.
Use place value understanding and properties of operations to compare numbers, add and subtract.
Describe and use patterns when counting by 1s, and skip counting by 5s, 10s, and 100s within 1,000.
Determine whether a number is even or odd.
Write an equation to express an even number as a sum of two equal addends.
Use arrays to find the sum of equal addends.
Students represent and solve Add To, Take From, Put Together, Take Apart and Compare word problems

Essential Questions

What does it mean to do math?
How can I use place value to understand and compare numbers to 1,000?
How can I use patterns to count and add numbers?
How can I represent and solve addition and subtraction word problems?

Learning Objectives

Describe how math is used in their daily lives and in the lives of others.
Explore options for understanding a problem and strategies for solving it.
Use mathematics to represent real-world situations and problems.
Explore ways to construct arguments to support their thinking.
Explore strategies for uncovering patterns and for using patterns to solve problems.
Students discuss and decide on classroom norms of interaction for a productive math learning environment.
Explain hundreds with regard to place value.
Explain what the digits in a 3-digit number represent.
Read and write numbers to 1,000.
Decompose 3-digit numbers by grouping the hundreds, ten, and ones in different ways.
Use words and symbols to compare 3-digit numbers.
Describe patterns when counting by 1’s within 1,000.

Skip count by 5s within 1,000.
Skip count by 10s and 100s within 1,000.
Determine if the number of objects in a group is even or odd.
Write an equation to express an even number as a sum of two equal addends.
Use skip counting to find the total number of objects in an array.
Use arrays to find the sum of equal addends.
Represent and solve Add To problems.
Represent and solve Take From problems.
Solve two-step Add To and Take From problems.
Represent and solve Put Together problems.
Represent and solve Take Apart problems.
Solve two-step Put Together and Take Apart problems.
Represent and solve Compare problems.

Standards: Content

2.OA	Operations and Algebraic Thinking
2.OA.A	Represent and solve problems involving addition and subtraction
2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.OA.C	Work with equal groups of objects to gain foundations for multiplication
2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
2.OA.C.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
2.NBT	Number and Operation in Base Ten
2.NBT.A	Understand place value
2.NBT.A.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
2.NBT.A.1.a	100 can be thought of as a bundle of ten tens — called a “hundred.”
2.NBT.A.1.b	The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s.
2.NBT.A.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
2.NBT.A.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Standards: Interdisciplinary

9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
8.1.2.NI.2	Describe how the Internet enables individuals to connect with others worldwide.
9.1.2.PB.1	Determine various ways to save and places in the local community that help people save and accumulate money over time.
9.1.2.PB.2	Explain why an individual would choose to save money.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
8.1.2.AP.2	Model the way programs store and manipulate data by using numbers or other symbols to represent information.
9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).
9.4.2.TL.7	Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Assessment Evidence

Formative	Collaborative Activities, Homework, Daily Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Games, Exit Slips, Questioning, Teacher Made Pages, Learning Centers, Problem of the Day, Reveal Workbooks, Fluency Checks, Curious, Activity Based Exploration, Guided Exploration, On My Own.
Summative	Tests, Mid-Chapter Checkpoint assessments, teacher generated assessments
Alternative & Benchmark	Alternative – Reteaching, One on One Conferencing, Learning Centers, student portfolio of assignments, Homework, Higher Order Thinking Problems, Additional leveled practice, orally administered assessments. Benchmark - LinkIt Benchmark Assessments, Totowa TPA
Assessment Evidence Resource	

Instructional Resources

Smartboard, Computers, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Reveal, Resources, manipulatives, post-it notes, markers, number lines, chart & graph paper, construction paper, glue, scissors, paperclips, crayons, envelopes, dot ink & cards, geo blocks, number cubes/dice.

Instructional Resource List

Curricular Mandates

Below are the curricular requirements as defined in NJ Administrative Code and Statute

	Amistad		Diversity, Equity, and Inclusion
	Holocaust		LGBT and Disabilities (Grades 6-12)
	Climate Change		Asian American & Pacific Islander

Social Emotional Learning (SEL) Competencies

NJ Social and Emotional Learning Competencies & Sub-Competencies

X	Self-Awareness	X	Relationship Skills
X	Responsible Decision-Making	X	Social Awareness
X	Self-Management		

21st Century Skills & Themes

	Global and Cultural Awareness	X	Technology Literacy		Planning and Budgeting
X	Creativity and Innovation		Financial Institutions		Risk Management and Insurance
	Information and Media Literacy		Digital Citizenship		Economic and Government Influences
X	Critical Thinking and Problem Solving		Credit Profile		Career Awareness and Planning
	Civic Financial Responsibility		Financial Psychology		