Math Grade 1

Number Sense, Place Value, and Estimation

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

Numbers are used for multiple purposes in our everyday lives.

Recommended Pacing

52 Days (2 units & embedded throughout the year)

New Jersey Student Learning Standards for Mathematics

Standard 1.NBT.B Understand place value.

Standard #	Standard
1.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 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. 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 <.

Standard 1.NBT.A Extend the counting sequence.

Standard #	Standard
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.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard

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

Interdisciplinary Connections

Standard #	Standard
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Numbers are used to represent quantities or order.
- The base ten numbers are recorded using digits 0-9, groups of 10 and place value.
- Numbers can be compared and related to other numbers and objects.
- Numbers can be estimated.
- Numbers can be counted in a variety of ways (e.g., forward and backward).

Unit Essential Questions

- How can numbers and sets be compared and ordered?
- How are digits used to create numbers?
- What are different ways to count?
- How is estimation helpful for mathematical thinking and problem solving?

Objectives

Students will know:

- Numbers from 1-120
- Numbers are used in counting and that you can count in a variety of ways
- Position words: before, after, and between to explain number relationships
- How ordinal numbers are used
- Comparative vocabulary
- That the position of a digit affects the value of that digit
- That estimation is an approximation
- That numbers can be arranged in multiple sequences and number patterns
- The magnitude of 120

Students will be able to:

- Construct, identify, and compare sets of numbers to 120 (I/D)
- Explore the use of ordinal numbers (I/D)
- Record numbers using tally marks (I/D)
- Skip count by 2's, 5's and 10's to 120 with and without manipulatives (I/D)
- Identify, order and record numbers to 120 (I/D/M)
- Count forward to 120 and backwards from 20 (I/D/M)
- Investigate odd and even numbers (I/D)

- Compare sets of numbers using vocabulary and signs (>, <, and =) (I/D)
- Develop the concepts of place value for 2 digit numbers with the use of manipulatives (D)
- Investigate the magnitude of 120 using manipulatives (I/D)
- Write a 2 digit number in standard form (I/D)
- Explore patterns in number sequences using manipulatives and a 100's (and 120's) chart (D)
- Group by 10's to estimate (I/D)
- Use benchmarks to estimate (D)
- Estimate sets without counting (I/D)

Resources

Primary Text:

enVision Math

Instructional & Professional Resources:

- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching First Grade Math* by Laura Hunovice, Susan O'Connell, & John SanGiovanni
- *Math Workshop: Five Steps to Implementing Guided Math, Learning Stations, Reflection, and More* by Jennifer Lempp
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Operations

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

Numbers can be used to represent quantities and solve problems. Real world problems can be solved using multiple strategies and operations.

Recommended Pacing

50 Days (3 units)

New Jersey Student Learning Standards for Mathematics

Standard 1.OA.A Represent and solve problems involving addition and subtraction.

Standard #	Standard
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.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.

Standard.1.OA.B Understand and apply properties of operations and the relationship between addition and subtraction.

Standard #	Standard
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.

Standard 1.OA.C Add and subtract within 20.

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

Standard 1.OA.D Work with addition and subtraction equations.

Standard #	Standard

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 does not equal 5 + 2.
1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating 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 =____.
Standard 1.NBT.C Use place value understanding and properties of operations to add and subtract.	
Standard #	**Standard**
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.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.
New Jersey Student Learning Standards for 21st Century Life and Careers	
Career Ready Practices	
Standard #	**Standard**
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.
9.2 Career Awareness, Exploration, and Preparation	
Standard #	**Standard**
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
New Jersey Student Learning Standards for Technology	
Standard #	**Standard**
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
Interdisciplinary Connections	
Standard #	**Standard**
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- There are many ways to use addition and subtraction.
- Addition and subtraction are inverse operations.
- Quantities can be joined, separated, or compared.
- Proficiency with basic facts facilitates the ability to solve problems in contexts.

Unit Essential Questions

- How does knowing basic facts help make basic problem solving easier?
- How can problem solving strategies be used to join, separate, or compare sets?
- How can quantities, operations, or relationships be represented by symbols?

Objectives

Students will know:

- That addition and subtraction are closely related
- Appropriate vocabulary for operations such as plus, minus, equals, sum, difference and addends
- Operations can be represented through pictures, manipulatives, symbols, and numbers
- Multiple strategies to help solve addition and subtraction problems
- Subtraction is a way of finding the difference

Students will be able to:

- Describe and record basic addition/subtraction facts to 10 with manipulatives (D/M)
- Use appropriate vocabulary; plus, minus, equals, sum, difference and addends (I/D)
- Construct and investigate the sums of 1 and 2 digit numbers without regrouping using manipulatives (I/D/M)
- Use a number line to solve addition and subtraction problems (I/D)
- Construct and describe fact families to 10 (I/D)
- Model and describe doubles (+/-) (I)
- Solve addition problems with three whole numbers with sums less than or equal to 20
- Count forwards and backwards from any number within 20 to solve appropriate addition and subtraction problems
- Use strategies to solve addition and subtraction problems within 20 (i.e.; decomposing a number, make 10, etc.)
- Add within 100 including a two-digit number and a one-digit number
- Add a two-digit number and a multiple of ten (I/D)
- Understand that in adding two-digit numbers, we add tens and tens, ones and ones (I/D)
- Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count, and be able to explain this process (I/D)
- Solve 2 digit addition/subtraction problems without regrouping, using manipulatives (I/D)
- Develop mental math strategies to find sums and differences (I/D)
- Use manipulatives to develop mental math and paper/pencil strategies to solve problems and to check to see if problems make sense (I/D)
- Use calculators to perform whole calculations when appropriate (I/D)
- Use concrete materials to create tables and number sentences (I/D)

- Understand the meaning of an addition/subtraction number sentence using a _____as a variable (I)
- Subtract to find the difference between two numbers (I/D)
- Subtract multiples of 10 in the range from 10-90 using concrete models or drawings (I/D)
- Solve comparison problems using various strategies (I/D)
- Use objects to solve open addition sentence situations (missing addends) (I)
- Use the commutative and associative property (e.g., easier combinations for adding such as 5 + 1 + 5 being solved as 5 + 5 + 1) of addition as addition strategies (I/D)
- Relate problem situations to number sentences involving addition and subtraction (I)
- Determine the reasonableness of a sum or difference by the magnitude of the answer (D)

Resources

Primary Text:
enVision Math

Instructional & Professional Resources:

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Algebra

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

Algebra is a system used to communicate efficiently about patterns, rules, and relationships.

Recommended Pacing

10 Days

New Jersey Student Learning Standards for Mathematics

Standard 1.NBT.A Extend the counting sequence.

Standard #	Standard
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.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Interdisciplinary Connections

Standard #	Standard
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Patterns are found in the world around us.
- Patterns are predictable.
- Patterns can be created, labeled and extended.
- Patterns must repeat in some way in order to be a pattern and not a design.
- The same pattern can be expressed using a variety of contexts and elements.
- Rules can describe a relationship.
- Change occurs over time.
- Mathematical equations represent relationships among quantities.

Unit Essential Questions

- What is a pattern?
- Where are patterns found?
- How do you describe and identify changes over time?
- How is a number sentence like a balance scale?
- How do we use symbols to represent mathematical ideas?

Objectives

Students will know:

- Repeating patterns occur in a variety of contexts (numbers, pictorial, objects, rhythm, and movement)
- Patterns are predictable
- The core of a repeating pattern is the shortest string of elements that repeat
- The core of a pattern must repeat completely
- Letters can be used to represent elements in a pattern
- Patterns can be labeled
- Pattern vocabulary including core, element, and rule
- Changes occur over time
- A simple pattern uses each element within the core one time
- A complex pattern has at least one element within the core that is used more than once
- The part, part, whole relationship of quantities and use this terminology
- The order and grouping of numbers doesn't affect the sum
- A number sentence (equality) always has an equal sign
- A number sentence is like a balance scale
- The difference between a sorting rule and a number relationship rule
- The equal sign means both sides of a number sentence are balanced

Students will be able to:

- Discriminate between patterns and random arrangements or designs (D)
- Create, extend, describe and compare simple patterns (D)
- Label patterns using letters (ABAB, AABB, AAB, ABC, etc.) (D)
- Notice and describe patterns in real life (D)
- Create addition patterns with a calculator (I/D)
- Identify skip counting patterns using manipulatives (I/D)
- Identify and describe changes over time (D)
- Describe a rule from a completed function table (I)
- Develop the properties of addition (part, part, and whole) (I)
- Solve for the unknown in an addition sentence (I)

- Model, represent, and interpret the part, part, whole relationship to solve problems involving addition and subtraction (I/D)
- Relate problem situations to number sentences involving addition and subtraction (I)
- Compare two quantities using the words greater than, less than, and equal to (I/D)
- Identify skip counting patterns (2's, 5's, and 10's) on a hundred chart (I/D)
- Explore using one shape repeatedly to cover (tessellate) a plane (I)

Resources

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Data Analysis

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

There are efficient mathematical ways to collect, organize, record, display, and communicate data. This helps us analyze, draw conclusions, and make predictions about real world events.

Recommended Pacing

10 Days

New Jersey Student Learning Standards for Mathematics

1.MD.C. Represent and interpret data.

Standard #	Standard
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.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Interdisciplinary Connections

Standard #	Standard
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.

SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Data displays convey organized information in a concise way.

Unit Essential Questions

- How can information be gathered, organized, and displayed to communicate information?
- What information do graphs (bar and pictographs) represent?

Objectives

Students will know:

- Data can be represented visually using tallies, pictures, lists, tables, glyphs, Venn diagrams, charts, and graphs
- Graphs organize and show information about the collected data
- The process necessary to gather and organize information
- How to interpret data from bar graphs, charts, glyphs, and pictographs

Students will be able to:

- Gather and organize data to answer simple questions. Analyze the data to answer such questions as "What is the total number of data points?" "How many in each category?" "How many more or less are in one category than in another?" (D)
- Use tally marks to represent data (D)
- Use tables, pictures, lists, glyphs, Venn diagrams, charts, bar graphs, or pictographs to represent or interpret data (D)
- Analyze and predict patterns on a table (I/D)
- Interpret and describe data to others using numbers and vocabulary such as: more than, less than, most, least, and same (D)
- Use concrete materials to create tables and graphs (I/D)
- Gather and organize data from surveys, spinners, dot cubes, etc. (D)

Resources

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Geometry

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

Children interpret the physical world with geometric ideas - shape, orientation, and spatial relationships.

Recommended Pacing

14 Days

New Jersey Student Learning Standards for Mathematics

Standard 1.G.A Reason with shapes and their attributes.

Standard #	Standard
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.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

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Instructional Focus

Unit Enduring Understandings

- Shapes/objects can be described and compared using their attributes.
- The position and size of a shape/object can be described.

Unit Essential Questions

- How can a shape be described?
- What words can be used to describe the position and size of a shape/object?
- What are the ways shapes/objects can be sorted?

Objectives

Students will know:

- Concept of straight
- Names of 2D and 3D shapes
- Characteristics (attributes) of 2D and 3D shapes
- Characteristics of congruence and symmetry
- Directional and positional vocabulary

Students will be able to:

- Identify a straight line (I/D/M)
- Sort and classify objects by attributes (D)
- Identify and describe 2D shapes using the attributes of sides and corners. (circle, square, triangle, rectangle, trapezoid, half-circle, quarter-circle, and hexagon) (D)
- Identify shapes as open or closed (I/D)
- Correctly name a shape regardless of the orientation or size (D/M)
- Identify a flip, slide, or turn (I/D)
- Draw a representation of a circle, square, triangle, and rectangle (D)
- Identify a trapezoid, rhombus, and hexagon (I)
- Compose two-dimensional shapes or three-dimensional shapes to create a composite shape and compose new shapes from the composite shape (I/D)
- Identify and describe 3D shapes models using attributes. (sphere, cube, cone, pyramid, cylinder, rectangular prism) (I)
- Sort, classify, and compare 2D and 3D shapes (D)
- Locate the inside and outside of plane figures (I/D)
- Give directions using left, right, forward, and backward (D/M)
- Compare objects seen from different perspectives using... over, under, next to, above, below, larger, smaller, largest, and smallest (D/M)
- Compare shapes/objects that appear congruent and similar (I/D)
- Identify objects that are symmetrical (D)
- Use shapes to cover (tessellate) a larger area or shape (D)

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Fractions	
Content Area: Mathematics	
Course & Grade Level: Mathematics, Grade 1	
Summary and Rationale	
Numbers are used for multiple purposes in our everyday lives.	
Recommended Pacing	
6 Days	
New Jersey Student Learning Standards for Mathematics	
Standard 1.G.A Reason with shapes and their attributes.	
Standard #	**Standard**
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.
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RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- A fraction represents a part of a whole.
- A fraction represents part of a set.
- Fractions are equal parts.

Unit Essential Questions

- How can a whole be divided into equal parts?
- How can a set be divided into equal parts?
- How can you show equal parts to solve a problem?
- How can a fraction be represented?

Objectives

Students will know:

- Fraction vocabulary (fair shares, whole, halves, equal parts, thirds, fourths)
- That a whole can be divided into equal parts
- That some sets can be divided into equal parts
- Fractions (one-half, one-fourth) can be symbolized through pictures

Students will be able to:

- Identify fair shares of a whole as a fraction (1 whole, halves, and fourths) (I)
- Identify fair shares of a set using manipulatives (I/D)
- Understand that decomposing into more equal shares creates smaller shares (I)
- Relate fractions to each other using models and pictures (I)
- Create halves and fourths through the use of pictures or manipulatives (I)
- Identify fair shares of a set using manipulatives (I)

Resources

Primary Text:

enVision Math

Instructional & Professional Resources:

- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching First Grade Math* by Laura Hunovice, Susan O'Connell, & John SanGiovanni
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Measurement

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

There are some attributes of objects that are measurable and can be quantified using nonstandard and standard units.

Recommended Pacing

8 Days

New Jersey Student Learning Standards for Mathematics

Standard 1.MD.A Measure lengths indirectly and by iterating length units.

Standard #	Standard
1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1.MD.A.2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Interdisciplinary Connections

Standard #	Standard
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Objects can be compared and ordered by length, weight.
- Objects have distinct attributes that can be measured with appropriate tools.

Unit Essential Questions

- How do measurements help compare objects?
- How are standard and nonstandard units used to measure objects?
- How are measuring units/tools selected?
- How is estimation helpful in measurement?

Objectives

Students will know:

- The difference between standard and nonstandard units of measurement
- How to make reasonable estimates
- The meaning of estimate versus exact measurement
- 12 inches equals 1 foot
- How to use rulers and scales (including lining up at zero with a ruler).
- Perimeter is the distance around a shape or object
- How to use a balance scale

Students will be able to:

- To measure weight with nonstandard units (D/M)
- Compare weights of objects using a balance scale (D/M)
- Compare and order the length and weight of given objects through direct comparisons (I)
- Measure length to the nearest inch (I/D)
- Estimate, measure, and record using nonstandard and standard (inches) units of measurement (D)
- Investigate rulers and scales as measuring tools (I/D)

Resources

Primary Text:

enVision Math

Instructional & Professional Resources:

- Exemplars*, Problem Solving for the 21st Century*
- K-5 Math Teaching Resources
- *Math in Practice: Teaching First Grade Math* by Laura Hunovice, Susan O'Connell, & John SanGiovanni
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Money

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

Our system for using money assigns a commonly accepted value to coins and notes for the purpose of commerce.

Recommended Pacing

8 Days

New Jersey Student Learning Standards for Mathematics

Standard 1.NBT.A Extend the counting sequence.

Standard #	Standard
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.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Interdisciplinary Connections

Standard #	Standard
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Specific coins have specific values.
- Coins can be counted.
- Specific coins can be combined with other coins to make a new value.

Unit Essential Questions

- What are the names of all U.S. coins and their values?
- How do we determine the value of a set of coins?

Objectives

Students will know:

- How to identify the penny, nickel, dime, and quarter and their values (I/D)
- How to make fair trades with pennies, nickels, and dimes (I/D)

Students will be able to:

- Make fair trades with pennies, nickels, and dimes (I/D)
- Represent money amounts (I/D)
- Skip count by two's, five's, and tens when counting appropriate coins (D/M)
- Count sets of mixed coins by grouping like coins together (I/D)
- Count money starting with coins of greatest value (I/D)

Resources

Primary Text:

enVision Math

Instructional & Professional Resources:

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Time

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

The passage of time can be measured and recorded.

Recommended Pacing

6 Days

New Jersey Student Learning Standards for Mathematics

Standard 1.MD.B Tell and write time.

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

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology

Standard #	Standard
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Interdisciplinary Connections

Standard #	Standard
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W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Calendars and clocks are used as tools to document the passage of time.
- Calendars are important to show days, weeks, and months as units of time.
- Clocks are important to show the passage of time in seconds, minutes and hours.
- The hour hand tells the hour and the minute hand tells the number of minutes after or before the hour.
- Time duration can be ordered and estimated by using minutes, hours, and days.

Unit Essential Questions

- Why are calendars and clocks important in our daily lives?
- How do we use calendars and clocks to help organize our lives?

Objectives

Students will know:

- The definition of morning, afternoon, and evening
- 7 days in 1 week (and the names of the days)
- 12 months in 1 year (and the names and order of the months)
- The passage of time is continuous
- The appropriate tools to use for measurement of time (clocks and calendars)

Students will be able to:

- Understand the concept of morning, afternoon, and night (D/M)
- Read and record time to the hour and half hour using digital and analog clocks (I/D)
- Put daily activities into a time frame (first, second, and third) (D/M)
- To use and read a calendar (D)
- To identify the days of the week and the months of the year (D)
- Identify the correct placement of the hour and minute hands when showing time to the hour and half hour (I)

Resources

Primary Text:

enVision Math

Instructional & Professional Resources:

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Standards for Mathematical Practice

Content Area: Mathematics

Course & Grade Level: Mathematics, Grade 1

Summary and Rationale

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

Recommended Pacing

Embedded throughout the year

New Jersey Student Learning Standards for Mathematics

Standards for Mathematical Practice

Standard #	Standard
MP1	Make sense of problems and persevere in solving them.
MP2	Reason abstractly and quantitatively.
MP3	Construct viable arguments and critique the reasoning of others.
MP4	Model with mathematics.
MP5	Use appropriate tools strategically.
MP6	Attend to precision.
MP7	Look for and make use of structure.
MP8	Look for and express regularity in repeated reasoning.

New Jersey Student Learning Standards for 21st Century Life and Careers

Career Ready Practices

Standard #	Standard
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.

9.2 Career Awareness, Exploration, and Preparation

Standard #	Standard
9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

New Jersey Student Learning Standards for Technology	
Standard #	**Standard**
8.1	All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
Interdisciplinary Connections	
Standard #	**Standard**
W.1.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
W.1.8	With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
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.
SL.1.5.	Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
RI.1.1	Ask and answer questions about key details in a text.

Instructional Focus

Unit Enduring Understandings

- Mathematicians problem solve by collaborating, analyzing, communicating and critiquing arguments, model, think strategically, and persevering when faced with a challenge.

Unit Essential Questions

- What are the essential practices and processes through which mathematicians learn to create and communicate knowledge?

Objectives

Students will be able to:

- Explain the meaning of problems, looking for multiple entry points to solve problems and use different methods to check their solutions.
- Make sense of quantities and their relationships in problem solving situations.
- Construct arguments using concrete referents such as objects, drawings, diagrams, and actions.
- Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
- Consider the available tools when solving a mathematical problem.
    - Identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems.
    - Use technological tools to explore and deepen their understanding of concepts.
- Communicate precisely to each other including the use of units of measure, and express numerical answers with a degree of precision appropriate for the context.
- Look closely to discern a pattern or structure.
- Notice if calculations are repeated, and look both for general methods and for more efficient methods of solving problems.

Resources

Primary Text:

enVision Math

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- K-5 Math Teaching Resources

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