Grade 1 Math Unit 3

Content Area: **Mathematics**
Course(s):
Time Period: **Trimester 3**
Length: **59 Days**
Status: **Published**

Brief Summary of Unit

In this unit, students will apply familiar models and familiar strategies to add two-digit numbers and one-digit numbers. Students will add a one-digit number to a two-digit number within 100, where ones combine to make a total less than 10. They will also add a two-digit number to a two-digit number within 10, where the ones combine to make a total less than 10. Next, students will solve problems involving adding two-digit and one digit numbers, including crossing a ten. Additionally, students will use equations showing composition and decomposition to add two-digit numbers, and explain the reasoning used.

In this unit, students will also distinguish between defining attributes and non-defining attributes. They will build and draw new shapes with a given set of defying attributes and use two or more shapes to make a new composite shape. Next, students will draw lines to partition circles, squares, and rectangles into two or four parts. Students will describe equal parts using the words halves, fourths, and quarters and use phrases half of, fourth of and quarter of. Students will describe a whole shape as a number of equal parts.

Students will also read, draw, and write the time on an analog and digital clock to the hour and half hour.

In addition, students will directly compare lengths of three objects and order the objects by length. Students will describe lengths of objects as they relate to each other. Next, students will measure the length of an object using a whole number of non-standard units of measure and iterate units with no gaps or overlaps.

Finally, students will identify pennies, nickels, dimes, and quarters and know their values. Students will count on and/or add to find the value of a collection of coins.

Revision Date: August 2024

Essential Questions

Essential Questions:

- How can we use digital and analog clocks to tell the time?
- How do you add multiples of ten to any one or two-digit number?

- How do you subtract multiples of ten within 100?
- How do we add two-digit and one-digit numbers within 100?
- How do we add two-digit and two-digit numbers within 100?
- How do we compare length?
- How can we measure an object using nonstandard units?
- How can we classify a shape?
- How can we divide circles, squares, and rectangles into equal parts?
- How do we identify the value of different coins?

Enduring Understandings:

- An hour is 60 minutes and a half hour is 30 minutes
- Hands on a clock represent time
- Adding and subtracting multiples of ten is related to adding and subtracting ones
- Adding or subtracting a ten results in a change in the tens digit, the ones digit remains the same
- A ten is composed when adding ones that total 10 or more
- Place value can help us find sums when adding a two-digit numbers
- Objects can be arranged from longest to shortest or tallest to shortest and vice versa
- Lengths/heights of objects can be directly or indirectly compared
- Identical objects can be used as a unit of measurement (such as paper clips that are all the same size or identical unifix cubes) if the objects are lined up with no gaps in between
- Shapes have defining and non-defining attributes
- Shapes can be combined to make other shapes
- Circles, squares, and rectangles can be divided into halves or fourths/quarters
- As a circles, squares, or rectangles is divided into more equal parts, the parts get smaller
- Coins and specific names and values that can be counted

Students Will Know/Students Will be Skilled At

Students will know:

- How to apply familiar models and familiar strategies to add two-digit numbers and one-digit numbers.
- How to add a one-digit number to a two-digit number within 100, where ones combine to make a total less than 10.
- How to add a two-digit number to a two-digit number within 10, where the ones combine to make a total less than 10.
- How to solve problems involving adding two-digit and one digit numbers, including crossing a ten.
- How to use equations showing composition and decomposition to add two-digit numbers, and explain the reasoning used.
- How to distinguish between defining attributes and non-defining attributes.
- How to build and draw new shapes with a given set of defying attributes and use two or more shapes to make a new composite shape.
- How to draw lines to partition circles, squares, and rectangles into two or four parts.
- How to describe equal parts using the words halves, fourths, and quarters and use phrases half of, fourth of and quarter of.
- How to describe a whole shape as a number of equal parts.
- How to read, draw, and write the time on an analog and digital clock to the hour and half hour.
- How to directly compare lengths of three objects and order the objects by length.
- How to describe lengths of objects as they relate to each other.
- How to measure the length of an object using a whole number of non-standard units of measure.
- How to iterate units with no gaps or overlaps.
- How to identify pennies, nickels, dimes, and quarters and know their values.
- How to count on and/or add to find the value of a collection of coins.

Students will be skilled at:

- Applying familiar models and familiar strategies to add two-digit numbers and one-digit numbers.
- Adding a one-digit number to a two-digit number within 100, where ones combine to make a total less than 10.
- Adding a two-digit number to a two-digit number within 10, where the ones combine to make a total

less than 10.

- Solving problems involving adding two-digit and one digit numbers, including crossing a ten.
- Using equations showing composition and decomposition to add two-digit numbers, and explain the reasoning used.
- Distinguishing between defining attributes and non-defining attributes.
- Building and drawing new shapes with a given set of defying attributes and use two or more shapes to make a new composite shape.
- Drawing lines to partition circles, squares, and rectangles into two or four parts.
- Describing equal parts using the words halves, fourths, and quarters and use phrases half of, fourth of and quarter of.
- Describing a whole shape as a number of equal parts.
- Reading, drawing, and writing the time on an analog and digital clock to the hour and half hour.
- Directly comparing lengths of three objects and order the objects by length.
- Describing lengths of objects as they relate to each other.
- Measuring the length of an object using a whole number of non-standard units of measure.
- Iterating units with no gaps or overlaps.
- Identifying pennies, nickels, dimes, and quarters and know their values.
- Counting on and/or add to find the value of a collection of coins.

Learning Plan

Daily Warm-ups (5-10 minutes):

*As an opening to each math lesson, the instructor can use these different routines

- Number Talks- District Created Number Talk Slides
- Quick Images- This routine helps students to subitize, or “instantly see how many”. The teacher should briefly show an image of a quantity (using dot cards, ten frames, etc.). Students are then asked to identify the quantity they saw and to describe the image.
- Count Around the Room - Have students stand in a large circle around the room and count in a circle starting at different numbers within 110 (count by 10s forwards backwards, count by 1’s forwards and backwards).
- Buzz - Have students stand in a large circle around the room. Students will count around the room

however, one number will be the “Buzz Number”. When a student says the “Buzz Number,” that child is “out” and will sit down. Then, the counting sequence begins again. Keep playing until there is only one student left.

- Partner Counting- The first partner will tell their partner a number to start counting from. The partner will start counting. Using hand signals, the first partner can signal their partner to stop counting. Then, begin counting backward and then forward again. (Hand signals: Fist = Stop, Pointing up = Count Up, Pointing Down= Count Down) They can count for 30 seconds and then switch partner roles.

*First graders need to be fluent in adding and subtracting within 10. This is a skill that should be worked on throughout the year utilizing the Ready Math Program and supplemental resources that are located under materials.

1**. Addition with Two-Digit Numbers:** The instructor will describe how to add two-digit numbers and one-digit numbers using models. The students will be taught to understand steps to decompose a number into tens and ones using blocks. Instruct students how to add a one-digit or a two-digit number to a two-digit number using a 100 chart.

a. Complete Lesson 19, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Apply familiar models and addition strategies to add two-digit numbers and one-digit numbers

   ii. Add a one-digit number to a two-digit number within 100, where the ones combine to make a total less than 10.

   iii. Add a two-digit number to a two-digit number within 100, where the ones combine to make a total less than 10.

c. Lesson Vocabulary: addend, digit, ones, tens, total, describe, predict

2. **Add Two-Digit and One-Digit Numbers**: The instructor will extend students’ knowledge of adding multiples of tens and basic fact fluency to adding two-digit and one-digit numbers with sums within 100. Students will be able to add two-digit and one-digit numbers with and without regrouping. Students will discover regrouping is necessary when adding ones that total 10 or greater. The instructor will record equations that show how to cross to the next ten when adding ones that total 10 or more using equation frames and models. The instructor will explain why strategies for adding two-digit and one-digit numbers work using models. Instruct the students to describe the steps used to add two-digit and one-digit numbers, including crossing a ten, using models.

a. Complete Lesson 20, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Cross to the next ten when adding ones that total 10 or more

ii. Develop strategies to add two-digit and one-digit numbers and explain the reasoning used.

iii. Solve problems involving adding two-digit and one-digit number, including crossing ten as needed.

iv. Add two-digit and one-digit numbers without regrouping using a number chart

v. Add two-digit and one-digit numbers with regrouping using models

vi. Add two-digit and one-digit numbers with and without regrouping using place value

vii. Add two-digit and one-digit numbers with regrouping using number bonds

c. Lesson Vocabulary: digit, ones, tens, make a ten, predict

3. **Add Two-Digit Numbers**: The instructor will extend students' knowledge of adding two-digit and one-digit numbers by showing students how to add two two-digit numbers to find sums within 100. The instructor will explain how to use and build on previously learned models and addition strategies to add two-digit numbers. The instructor will describe how to add two-digit numbers by adding tens with tens and ones with ones using models and objects. Instruct students to write equations that use composing and decomposing to add two-digit numbers. Students will be able to add two-digit and two-digit numbers with and without regrouping.

a. Complete Lesson 21, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

i. Apply and extend previously learned models and addition strategies to add two-digit numbers.

ii. Understand that to add two-digit numbers, you can add the tens with the tens and the ones with the ones.

iii. Use equations showing composition and decomposition to add two-digit numbers and explain the reasoning used.

iv. Add two two-digit numbers without regrouping using base ten blocks and a hundred chart

v. Add two two-digit numbers with regrouping using drawings and models that demonstrate composing a ten

vi. Add two two-digit numbers with and without regrouping using number bonds

vii. Add two two-digit numbers with and without regrouping using strategies of the students' choice

c. Lesson Vocabulary: digit, ones, place, value, tens

4. **Shapes**: The instructor will guide students in exploring different 2D and 3D shapes. Students will determine and distinguish between defining and nondefining attributes and students will classify the shapes.Instruct the students to state which attributes described by a partner help identify shapes and which do not. Instruct the students to read and interpret written attributes to build and draw the shapes they describe.

a. Complete Lesson 22, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Distinguish between defining attributes and non-defining attributes.

   ii. Analyze, describe and name shape according to attributes.

   iii. Build and draw news shapes with a given set of defining attributes.

   iv. Use two or more shaped to make a new composite shape.

   v. Sort shapes into groups by common attributes

   vi. Compare the attributes of 2D shapes in order to name triangles, rectangles, and hexagons by the number of sides and corners

   vii. Compare the attributes of 3D shapes to determine defining attributes as they examine cones, rectangular prisms cubes, cylinders, and spheres while connecting 3D objects to 2D objects

   viii. Draw and identify 2D shapes and name 3D shapes based on their attributes

c. Lesson Vocabulary: rhombus, trapezoid, vertex, attribute, compose, edge, face, flat, side, solid, describe, clue

5. **Break Shapes into Equal Parts:** The instructor will show children how to divide circles, squares, and rectangles into equal parts called halves or fourths/quarters. Students will be able to determine the number of equal parts in these shapes. The instructor will explain how to partition circles, squares, and rectangles into two or four equal parts. Instruct students to compare fourths and halves of the same whole.

a. Complete Lesson 23, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Draw lines to partition circles, squares, and rectangles into two or four parts.

   ii. Describe equal parts using the words halves, fourths, and quarters, and use phrases half of, fourth of, quarter of.

   iii. Describe a whole shape as a number of equal parts.

   iv. Understand the relationship between the number and size of equal parts of the same shape.

   v. Fold cut out rectangles and squares into halves and fourths to observe the size and shape

of the parts

vi. Fold cut out rectangles and squares into halves and fourths and discuss how they know the parts are equal

vii. Use equal parts to compose and decompose whole shapes

viii. Show how to share a whole circle or square among two or four people in different ways

c. Lesson Vocabulary: equal parts, fourths, halves, quarters, unequal parts, whole, circle, rectangle, square, always, prove.

6. **Tell Time**: The instructor will introduce telling time to the nearest hour and half hour on both digital and analog clocks. Students will be able to draw and write the time on digital and analog clocks. The instructor should state aloud the time that is shown on the clocks. Instruct the students to describe how to position the minute and hour hands to show a given time. Instruct students to record to the hour and half hour on a digital clock.

a. Complete Lesson 24, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

i. Read time on an analog and digital clock to the hour and half hour.

ii. Draw the hour hand and minute hand on an analog clock to show a given time to the hour and half hour.

iii. Write the digits on a digital clock to show a given time to the hour and half hour.

iv. Exploring the positions of minute and hour hands on the clock when the minute hand is "on the hour"

v. Exploring the positions of minute and hour hands on the clock when the minute hand is not "on the hour"

vi. Relating analog and digital clocks

vii. Identifying and representing time on digital and analog clocks

c. Lesson Vocabulary: analog clock, digital clock, half hour, half past, hour (h), minute (min), minute hand, o'clock, equal parts, halves, after, between

7. **Compare and Order Lengths**: The instructor will guide students to apply their comparison skills to compare the lengths of objects and order objects by length. Instruct students to explain how to compare and order three objects by length. Students should use comparative language to describe lengths of three objects relative to each other. The instructor should describe steps for comparing the length of two objects using a third object.

a. Complete Lesson 25, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Directly compare lengths of three objects and order the objects by length.

   ii. Describe lengths of three objects as they relate to each other.

   iii. Indirectly compare lengths of two objects by using a third reference object.

   iv. Use reasoning to indirectly compare lengths of objects and recognize that indirect comparison can be helpful when it is not possible to compare objects directly.

   v. Draw different sized objects and compare their lengths

   vi. Identify the longest and shortest items in a group of objects

   vii. Align objects to compare lengths

   viii. Put objects in a specified order

c. Lesson Vocabulary: longest, shortest, tallest, attribute, compare, length, longer, shorter, taller, arrange

8. **Measure Length**: The instructor will provide objects that students will use as units to measure lengths. Students will learn to use the nonstandard units to properly measure lengths by lining up the objects without overlap or gaps in between. Instruct students to describe how to measure the length of an object using a whole number of nonstandard units. Students should be instructed to explain that the number of units placed end to end with no gaps or overlaps is a measure of an object's length. Instruct students to make connections between models, pictures, and objects to solve a problem.

a. Complete Lesson 26, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

   i. Measure the length of an object using a whole number of nonstandard units of measure.

   ii. Understand that the number of iterated units from end to end is a measure of length.

   iii. Iterate units with no gaps or overlaps.

   iv. Using toothpicks to find and discuss the length of objects using the word "about"

   v. Using square pattern blocks to find and discuss the length of objects using the word "about"

   vi. Using unit cubes to find and discuss the length of objects in the classroom using the word "about"

   vii. Determining and explaining when objects were measured correctly or incorrectly with nonstandard units

c. Lesson Vocabulary: measure, unit, compare, length, describe

9. **Money (Not an Optional Lesson)**: The instructor will show children the coins: pennies, nickels, dimes and quarters for students to identify and name. The instructor will share the value of each coin. Next the instructor will relate the value of coins (pennies, dimes, and quarters) to the value of one dollar and instruct students to count on to find the value of a set of dimes and pennies. Instruct the students to state orally and in writing the name and value of pennies, nickels, dimes, and quarters. The instructor will explain how to count on and/or add to find the value of a collection of coins.

a. Complete Lesson 27, Sessions 1-5 (5 days)

b. Possible strategies include but are not limited to:

i. Identify pennies, nickels, dimes and quarters.

ii. Know the values of pennies, nickels, dimes and quarters.

iii. Count on and/or add to find the value of a collection of coins.

iv. Reviewing prerequisite skills: counting by ones and tens and sorting objects by attributes.

v. Once students know the names and values of the coins you can present students a money amount and ask them to decide which coins are needed to make the correct cents on the bank and record how many of each coin they used.

vi. Present students with coins and a value. Students can decide if the coins are equal to a given value.

c. Lesson Vocabulary: cent (□), dime, dollar ($), nickel, penny, quarter, sort, value

GENERAL QUESTIONS FOR TEACHER USE

Adapted from Growing Success and materials from Math GAINS and TIPS4RM (Georgia Department of Education)

Reasoning and Proving

• How can we show that this is true for all cases?

• In what cases might our conclusion not hold true?

• How can we verify this answer?

• Explain the reasoning behind your prediction.

• Why does this work?

• What do you think will happen if this pattern continues?

• Show how you know that this statement is true.

• Give an example of when this statement is false.

• Explain why you do not accept the argument as proof.

• How could we check that solution?

• What other situations need to be considered?

Reflecting

• Have you thought about...?

• What do you notice about...?

• What patterns do you see?

• Does this problem/answer make sense to you?

• How does this compare to...?

• What could you start with to help you explore the possibilities?

• How can you verify this answer?

• What evidence of your thinking can you share?

• Is this a reasonable answer, given that...?

Selecting Tools and Computational Strategies

• How did the learning tool you chose contribute to your understanding/solving of the problem? Assist in your communication?

• In what ways would [name a tool] assist in your investigation/solving of this problem?

• What other tools did you consider using? Explain why you chose not to use them.

• Think of a different way to do the calculation that may be more efficient.

• What estimation strategy did you use?

Connections

• What other math have you studied that has some of the same principles, properties, or

procedures as this?

• How do these different representations connect to one another?

• When could this mathematical concept or procedure be used in daily life?

• What connection do you see between a problem you did previously and today's problem?

Representing

• What would other representations of this problem demonstrate?

• Explain why you chose this representation.

• How could you represent this idea algebraically? graphically?

• Does this graphical representation of the data bias the viewer? Explain.

• What properties would you have to use to construct a dynamic representation of this

situation?

• In what way would a scale model help you solve this problem?

Note: The instructor is encouraged to consult the supplemental resources located under materials to personalize and differentiate instruction for students, as well as address any learning gaps based on formative assessments.

Evidence/Performance Tasks

Formative Assessment:

- Fact Fluency Practice Assessments
- Administer Ready Math Quizzes at the end of each Lesson
- Administer Comprehension Check (digital)

Summative Assessments:

- Administer Ready Math Mid-Unit Assessments
- Administer Ready Math End of Unit Assessments

Benchmark Assessments:

- iReady Diagnostic
- Fact Fluency Assessment
- Acadience Assessment

Alternative Assessments:

- Informal Observation
- Small Group Observation
- Exit Tickets
- Math Journal
- Oral and Written Explanations of Reasoning

Materials

The following are approved resources that teachers can include to further unit related objectives:

Core Book List

- Ready Math Teacher Toolbox Resources
    - Whole Class Instruction
        - Teach: Instruction & Practice, Interactive Tutorials
        - Assess: Lesson Quizzes & Unit Assessments
    - Small Group Differentiation
        - Prepare: Prerequisite Lessons
        - Reteach: Tools for Instruction
        - Reinforce: Math Center Activities
        - Extend: Enrichment Activities
- Ready Math Workbook
- Ready Math Slides
- Digital Math Tools
- iReady My Path

- iReady Math Learning Games
- Manipulatives: two-color counters, tens frames, connecting cubes, base 10 blocks, paper clips or other items that can be used as nonstandard units of measurement
- Dry Erase boards
- Number paths
- Hundred charts
- Blank Bar Models
- Grid Paper
- Blank Number Bonds
- CPS District Mathematics Google Drive Folder

Any additional resources that are not included in this list will be presented to and reviewed by the supervisor before being included in lesson plans. This ensures resources are reviewed and vetted for relevance and appropriateness prior to implementation.

Standards

Diversity and Inclusion: Students will focus on equity, inclusion, and tolerance when analyzing the comparison of various quantities regarding characteristics of people. Equality will also be highlighted which can be associated with both numerical representations and the connection between people. This can be associated with treating people fairly and equally. Also, geometric art from various cultures. This unit also reflects the goals of the Department of Education and the Amistad Commission including the infusion of the history of Africans and African-Americans into the curriculum in order to provide an accurate, complete, and inclusive history regarding the importance of of African-Americans to the growth and development of American society in a global context. Cultural representations of geometric art also highlight the history and contributions of Asian Americans and Pacific Islanders in accordance with the New Jersey Student Learning Standards in Social Studies. The focus on the use of math in art further reflects the goals of the Holocaut Education mandate where students are able to identify and analyze applicable theories concerning human nature and behavior.

1	Make sense of problems and persevere in solving them
P.1	Act as a responsible and contributing community members and employee.
2	Reason abstractly and quantitatively

P.4	Demonstrate creativity and innovation.
P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
3	Construct viable arguments and critique the reasoning of others
1.OA.B.3	Apply properties of operations as strategies to add and subtract.
4	Model with mathematics
5	Use appropriate tools strategically
6	Attend to precision
7	Look for and make use of structure
8	Look for and express regularity in repeated reasoning
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.a	10 can be thought of as a bundle of ten ones — called a “ten.”
1.NBT.B.2.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.NBT.B.2.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.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.M.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1.M.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.
1.M.B.3	Tell and write time in hours and half-hours using analog and digital clocks.
1.M.C.4	Know the comparative values of coins and all dollar bills (e.g., a dime is of greater value than a nickel). Use appropriate notation (e.g., 69¢, $10).
1.M.C.5	Use dollars in the solutions of problems up to $20. Find equivalent monetary values (e.g., a nickel is equivalent in value to five pennies). Show monetary values in multiple ways.
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.
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.

SL.PE.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.PE.1.1.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.PE.1.1.B	Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
SL.PE.1.1.C	Ask questions to clear up any confusion about the topics and texts under discussion.
SL.AS.1.6	Produce complete sentences when appropriate to task and situation.

Suggested Strategies for Modification

Possible accommodations/modification for Grade 1

Note: Teachers can find more specific modifications for English learners, learners with special needs,learners reading below grade level, and advanced learners on the Ready Math website.