PLANNED INSTRUCTION

A PLANNED COURSE FOR:

Mathematics

Curriculum writing committee:

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Grade Level: 1

Date of Board Approval: 2024

Chapter Tests	40%
Performance Tasks	25%
Homework/Classwork	10%
Quizzes	25%
Total	100%

Curriculum Map

Overview:

The first-grade math program is designed to allow students to build a foundation upon which to apply mathematical understanding to real world situations. Students actively participate in calculation of concepts. Students will demonstrate and apply concepts which include Problem Solving, Computation, Numbers and Operations in Base Ten, Operations and Algebraic Thinking, Geometry, and Measurement and Data.

Goals:
1. Unit 1: Quarter 1

Chapter 0 Smart Start
- Identify/write numbers 1-50
- Identify/write numbers 50-100
- Identify/writ numbers 100-120

Chapter 1 Counting and Number Sense
- Count forward by 1s to 120
- Count backward by 1s within 120
- Skip Count by 5s
- Skip Count by 10s
- Ten More, Ten Less

Chapter 2 Count by tens and ones
- Understand ten and ones
- Make ten and ones
- Tens
- Tens and ones to 50
- Tens and ones to 100
- Show numbers in different ways
- Model, Read, and Write from 100-110
- Model, Read, and Write from 110-120
- Expanded Form

Chapter 3 Compare Numbers
- Greater Than
- Less Than
- Use symbols to compare
- Greater or Less than
- Order Numbers on an open number line

2. Unit 2: Quarter 2
   Chapter 4 Addition Concepts
   - Use Pictures to Add to
   - Model Adding To
   - Model Putting Together
   - Model Addition
   - Add Zero
   - Add to 10 in Any Order
   - Put Together Numbers to 10
   - Compose to 10

   Chapter 5 Subtraction Concepts
   - Use Pictures to Show Taking From
   - Model Taking From
   - Model Taking Apart
   - Model Subtraction
   - Use Pictures and Subtraction to Compare
   - Subtract to Compare
   - Subtract All or Zero
   - Take Apart Numbers
   - Subtract from 10 or Less

   Chapter 6 Addition Strategies
   - Count On
   - Add Doubles
   - Use Doubles to Add
   - Doubles Plus 1 and Doubles Minus 1
   - Practice the Strategies
   - Add 10 and More
   - Make a 10 to Add
   - Use Make a 10 to Add
   - Real-World Addition Problems

Chapter 7 Subtraction Strategies
- Count Back
- Think Addition to Subtract
- Use Think Addition to Subtract
- Use 10 to Subtract
- Break Apart to Subtract
- Use Subtraction Strategies
- Real-World Subtraction Problems

3. Unit 3: Quarter 3
Chapter 8 More Addition Strategies
- Add in Any Order
- Use Properties to Add 3 Numbers
- Practice Adding 3 Numbers
- Use Addition Strategies

Chapter 9
- Record Related Facts
- Identify Related Facts
- Use Addition to Check Subtraction
- Unknown Numbers
- Use Related Facts
- Choose an Operation
- Ways to Make Numbers to 20
- Equal and Not Equal
- Facts Practice to 20

Chapter 10
- Add and Subtract Within 20
- Add Tens
- Subtract Tens
- Use a Hundred Chart to Add
- Use Models to Add
- Add 2-Digit and 1-Digit Numbers
- Use Place Value to Add
- Addition Word Problems
- Related Addition and Subtraction

4. Unit 4: Quarter 4
Chapter 12
- Three-Dimensional Shapes
- Combine Three Dimensional Shapes
- Make New Three-Dimensional Shapes
- Take Apart Three-Dimensional Shapes
- Two-Dimensional Shapes on Three-Dimensional Shapes

Chapter 13
- Classify and Sort Two-Dimensional Shapes
- Attributes of Two-Dimensional Shapes
- Create Two-Dimensional Shapes
- Compose More Shapes
- Create New Two-Dimensional Shapes

Chapter 14 Fraction Concepts
- Equal and unequal parts
- Halves
- Fourths

Chapter 15 Measurement
- Estimate Lengths Using Inches
- Measure to the Nearest Inch
- Order Length

Chapter 16 Time
- Time to the Hour
- Time to the Half Hour
- Time to the Hour and Half Hour
- Practice Time to the Hour and Half Hour

Chapter 17 Graphing
- Read Picture Graphs
- Make Picture Graphs
- Tally Marks
- Make Tally Charts

Chapter 11 Money
- Pennies, Nickels, Dimes
- Count Collections of Coins
- Quarters

Big Ideas:

1. Mathematical relationships among numbers can be represented, compared, and communicated.
2. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
3. Patterns exhibit relationships that can be extended, described, and generalized
4. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.
5. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.
6. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.
7. Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.
8. Data can be modeled and used to make inferences.

Textbook and Supplemental Resources: School provided computer programs (IXL, Mathseeds, Waggle) Textbook ISBN # 978-0-35869480-9
Name of Textbook - Go Math
Textbook Publisher - Houghton Mifflin Harcourt,

The lessons incorporated into this curriculum encompass all the topics that need to be covered in first grade.
The activities and lessons listed can be done as a whole group or can be completed in small groups. Lessons can be differentiated to meet the needs of each group of students.
There are multiple lessons listed on each specific topic, not all lessons need to be completed. Once you feel the skill is mastered, move onto the next skill.

Unit 1:
Time Range in Weeks: Approximately 10 weeks

- Standards (by number):
  PA Core Mathematics Standards
  CC.2.1.1, CC.2.1.1.B, CC.2.1.1.B.2, CC.2.1.1.B.3

  Objectives: Students will be able to: (Any objective which reaches beyond level DOK 1, includes every level up to that point.)
1. use a counting pattern to help me count to 120. (DOK 1)
2. use a counting pattern to help me count backward from 120. (DOK 1)
3. can skip count by fives to 100. (DOK 2)
4. count by tens (DOK 2)
5. identify the numbers that are 10 more and 10 less than a two-digit number. (DOK 1,2)
6. use tens and ones to write a number in different ways. (DOK 1)
7. show a number as tens and ones. (DOK 2)
8. Use objects, pictures, and numbers to represent tens.(DOK 1)
9. Group objects to show numbers to 100 as tens and ones.(DOK 2)
10. Solve problems using the *strategy make a model*. (DOK 2)
11. Read and write numbers to represent a number of 100-120 objects (DOK 2)
12. Write numbers in expanded form (DOK 2)
13. Compare two numbers to find which is greater. (DOK 3)
14. Compare two numbers to find which is less. (DOK 3)
15. Use symbols to compare numbers. (DOK 3)
16. Make a model to compare numbers. (DOK 3)
17. Order numbers using an open number line. (DOK 2)

Core Activities and Corresponding Instructional Methods:

1. **Number Books**
   a. Practice number formation with number books
   b. Practice independent number formation with whole-group writing on white boards

2. **100 Chart Activities**
   a. Trace numbers on 100 and 120 charts
   b. Fill in blank 120 charts
   c. Practice skip counting by 5's and 10's

3. **Counting Songs**
   a. Sing counting by 5's (on YouTube)
   b. Sing counting by 10's (on YouTube)
   c. Sing count to 120 (on YouTube)

4. **Count Forward by ones to 120**
   a. Practice counting forward (starting from various numbers) using a 120 chart
   b. Have students filling in various blank spaces on a 120 chart
   c. Complete Go Math Chapter 1, Lesson 1: Share and Show/On Your Own Activities
   d. Complete IXL activity: B.4 "Counting a number chart-up to 120"

5. **Count Backwards by Ones Within 120**
   a. Practice counting backwards from 120, using a 120 chart
   b. Complete Go Math Chapter 1, Lesson 2: Share and Show/On Your Own Activities
   c. Complete IXL activity: B.2 "Counting backward - up to 120"

6. **Skip Count by 5's**
   a. Color in 120 charts to show skip counting by 5's
   b. Use number cards to skip count by 5's
   c. FIll in a missing number- counting by 5's worksheet
   d. Complete Go Math Chapter 1, Lesson 4: Share and Show/On Your Own Activities

7. **Skip Count by 10's**
   a. Color in 120 charts to show skip counting by 10's
   b. Use number cards to skip count by 10's
   c. FIll in a missing number- counting by 10's worksheet
   d. Complete Go Math Chapter 1, Lesson 5: Share and Show/On Your Own Activities

8. **10 More, 10 Less**
   a. Use a 120 chart to illustrate how to count 10 more, 10 less -color with crayons
   b. Play "What am I thinking of?" (Ex: I am thinking of a number that is 10 more than 34. What am I thinking of?" Students can use white boards to write their guess.)
   c. Complete Go Math Chapter 1, Lesson 6: Share and Show/On Your Own Activities

9. **Understand Tens and Ones**
   a. Use ten frames and connecting cubes to show numbers between 11-19
   b. Complete Go Math Chapter 2, Lesson 1: Share and Show/On Your Own Activities

10. **Make Tens and Ones**
    a. Using white boards, have students draw quick pictures to model numbers with tens and ones (11-

19) (example: 12 = 1 ten stick and 2 one circles)

    b. Complete Go Math Chapter 2, Lesson 2: Share and Show/On Your Own Activities

11. Tens

    a. Have students use connecting cubes to show grouping of ones into tens (example: students have twenty connecting cubes and must connect them together to make two ten sticks.)

    b. Complete Go Math Chapter 2, Lesson 3: Share and Show/On Your Own Activities

12. Tens and Ones to 50

    a. Using white boards, have students draw quick pictures to model numbers with tens and ones (20-50) (example: 32 = 3 ten sticks and 2 one circles)

    b. Complete Go Math Chapter 2, Lesson 4: Share and Show/On Your Own Activities

13. Tens and Ones to 100

    a. Using white boards, have students draw quick pictures to model numbers with tens and ones (51-100) (example: 67 = 6 ten sticks and 7 one circles)

    b. Complete Go Math Chapter 2, Lesson 5: Share and Show/On Your Own Activities

14. Show Numbers in Different Ways

    a. Explain to students that they will be modeling numbers in the same manner as the previous lesson, but now by putting it into a Tens and Ones Chart. Show using the Smart Board. Have students model on their whiteboards.

    b. Ask students if there is any other way to show a number. (example: 32 is 3 tens and 2 ones. It could also be shown as 2 tens and 13 ones.)

    c. Complete Go Math Chapter 2, Lesson 6: Share and Show/On Your Own Activities

15. Model, Read and Write from 100-110

    a. Have students find numbers, using a 100 chart, using tens and ones riddles (example: "What number is the same as 6 tens and 3 ones?" Students will then color in number 63 on their charts.)

    b. Using white boards, give students riddles and ask them to write the number that answers the riddle. (example: "What number has 10 tens and 3 ones?" Students will write the number 103 on their boards.)

    c. Complete Go Math Chapter 2, Lesson 7: Share and Show/On Your Own Activities

16. Model, Read and Write from 110-120

    a. Have students find numbers, using a 120 chart, using tens and ones riddles (example: "What number is the same as 10 tens and 4 ones?" Students will then color in number 104 on their charts.)

    b. Using white boards, give students riddles and ask them to write the number that answers the riddle. (example: "What number has 11 tens and 6 ones?" Students will write the number 116 on their boards.)

    c. Complete Go Math Chapter 2, Lesson 8: Share and Show/On Your Own Activities

17. Expanded Form

    a. Begin with Model and Draw from Go Math, Chapter 2, Lesson 9, explaining that with the number 65, the digit on the left means 6 tens and the digit on the right means 5 ones. Ask students how to use addition to show 65. (60+5=65).

Assessments:
- **Diagnostic:**
  Computer-based assessment (IXL/Waggle)
- **Formative:**
  Teacher Observations Use of Math Vocabulary
  "On Your Own" Activities from Go Math
- **Summative:**
  Teacher prepared Quizzes Go Math Chapter Tests
  Teacher prepared Performance Tasks
- **Extensions:**
  Go Math, Problem Solving- Applications
- **Correctives:**
  Go Math, Reteach activities

Unit 2:   **Time Range in Weeks: Approximately 10 weeks**

- **Standards (by number):**
  PA Core Mathematics Standards
  CC.2.2.1.A.1, CC.2.2.1.A.2

  Objectives: Students will be able to: (Any objective which reaches beyond level DOK 1, includes every level up to that point.)
  1. Use pictures to add and find sums (DOK 1)
  2. Use concrete objects to solve and add to problems (DOK 2)
  3. Use concrete objects to solve Put Together addition problems.(DOK 2)
  4. Solve Add To and Put Together problems using the strategy *make a model*. (DOK 2)
  5. Understand and apply the Additive Identity Property.(DOK 2)
  6. Explore the Commutative Property of Addition. (DOK 2)
  7. Model and record all the ways to put together numbers within 10. (DOK 2)
  8. Build fluency for addition within 10. (DOK 1)
  9. Use pictures to "take from" and find differences. (DOK 2)
  10. Use concrete objects to solve Take From subtraction problems. (DOK 2)
  11. Use concrete objects to solve Take Apart subtraction problems.(DOK 2)
  12. Solve Take From and Take Apart subtraction problems using the strategy *make a model*. (DOK 2)
  13. Compare pictorial groups to understand subtraction. (DOK 3)
  14. Compare pictorial groups to understand subtraction. (DOK 3)
  15. Model and compare groups to show the meaning of subtraction (DOK 3)
  16. Identify how many are left when subtracting all or zero. ((DOK 1)
  17. Model and record all the ways to take apart numbers within 10 (DOK 1)
  18. Build fluency for subtraction within 10. (DOK 1)
  19. Use count on 1, 2, 3 as a strategy to find sums within 20. (DOK 1)
  20. Use doubles as a strategy to solve addition facts with sums within 20. (DOK 1)
  21. Use doubles to create equivalent but easier sums. (DOK 1)
  22. Use doubles plus 1 and doubles -1 as strategies to find sums within 20. (DOK 1)
  23. Use the strategies count on, doubles, doubles +1, and doubles -1 to practice addition facts within 20. (DOK 1)
  24. Use a ten frame to add 10 and an addend less than 10. (DOK 1)
  25. Use make a ten as a strategy to find sums within 20. (DOK 1)
  26. Use numbers to show how to use the make a ten strategy to add (DOK 1)
  27. Solve real-world problems using objects, drawings or equations to represent the problem. (DOK 2)
  28. Use count back 1, 2, 3 as a strategy to subtract (DOK 1)
  29. Recall addition facts to subtract numbers within 20. (DOk 1)
  30. Use addition as a strategy to subtract numbers within 20. (DOK 1)
  31. Use make a 10 as a strategy to subtract. (DOK 1)
  32. Subtract by breaking apart to make a ten. (DOK 2)
  33. Solve subtraction problem situations using the *act it out strategy*. (DOK 2)
  34. Solve real-world subtraction problems. (DOK 3)

Core Activities and Corresponding Instructional Methods:

1. **Use Pictures to Add to**
   a. Complete Go Math Chapter 4, Lesson 1: Share and Show/On Your Own Activities
   b. Adding task cards - example - build with blocks to match numbers on cards, write equation on white board to match cards, count on to solve, write the sum.

2. **Model Adding To**
   a. Have children use connecting cubes to model an adding problem and draw to show their work on a white board
   b. Complete Go Math Chapter 4, Lesson 2: Share and Show/On Your Own Activities

3. **Model Putting Together**
   a. Complete Go Math Chapter 4, Lesson 3: Share and Show/On Your Own Activities
   b. Adding story problems - the teacher will tell the students an adding story. They will draw the story as it is told. Students will write an addition problem to match the story and solve.
   c. Students will be given a card showing an addition story with pictures. Students will write and solve the equation. Get checked and repeat with a new picture story card.

4. **Model Addition**
   a. Complete Go Math Chapter 4, Lesson 4: Share and Show/On Your Own Activities
   b. Missing Addend - students will learn how to find the missing addend by using a counting on strategy using one addend and the sum. Show examples on smart board. Students will practice problems on white boards. Use the vocabulary part, part, whole.

5. **Add Zero**
   a. Students will follow verbal directions to draw x items, add 0 items to the picture, tell how many items they have now. Repeat with new numbers and drawings, and always adding zero.
   b. Complete Go Math Chapter 4, Lesson 5: Share and Show/On Your Own Activities

6. **Add to 10 in Any Order**
   a. Students will have unifix cubes to represent a number. Break the cubes into two groups. Write the addition sentence to match the groups of blocks. Reverse the addends to show it does not matter the order of the addends to get the same sum.
   b. Complete Go Math Chapter 4, Lesson 6: Share and Show/On Your Own Activities

7. **Put Together Numbers to 10**
   a. Ways to make multiple addition problems for a specific number. Model how to divide a number to show multiple addition problems. Students will practice problems using white boards and blocks to show addition problems for a specific number (adding combinations).
   b. Complete Go Math Chapter 4, Lesson 7: Share and Show/On Your Own Activities

8. **Compose to 10**
   a. Complete Go Math Chapter 4, Lesson 8: Share and Show/On Your Own Activities
   b. Complete addition fact sheets to increase fact fluency.

9. **Use Pictures to Show Taking From**
   a. Give students picture cards with multiple pictures on the card. Count the object and identify the whole. Cross off a couple objects to make the part. Use this information to write a subtraction problem. Repeat with a different card.
   b. Teach students strategies for solving subtraction problems: draw the whole and cross off the part, count back, or count up. Complete problems on whiteboards to practice each strategy.
   c. Complete Go Math Chapter 5, Lesson 1: Share and Show/On Your Own Activities

10. **Model Taking From**
    a. Using connecting cubes students count out a specific number, take away a specific number,

and write the subtraction equation to match.

    b. Complete Go Math Chapter 5, Lesson 2: Share and Show/On Your Own Activities

11. **Model Taking Apart**

    a. Complete Go Math Chapter 5, Lesson 3: Share and Show/On Your Own Activities

    b. Have students work in pairs to create/write their own subtraction story. Students will trade stories with and solve.

12. **Model Subtraction**

    a. Bar models using the vocabulary part, part, whole. Students will practice putting the numbers of a subtraction problem in the correct sections of a bar model.

    b. Complete Go Math Chapter 5, Lesson 4: Share and Show/On Your Own Activities

13. **Use Pictures and Subtraction to Compare**

    a. Comparing Numbers - students will learn to use the words: more, higher, lower, less, and fewer. Use white boards and counters to show numbers, compare, and use subtraction to show if a number is more, higher, bigger, lower, less, smaller, fewer. Put counters out in rows to match each number. Connect rows giving partners. Circle the ones that don't have a partner. Use the information to compare numbers and write a subtraction problem.

    b. Complete Go Math Chapter 5, Lesson 5: Share and Show/On Your Own Activities

14. **Subtract to Compare**

    a. To help children understand comparing situations, as well as the ideas of more and fewer, first act out comparing problems with cube trains. Then introduce the comparison subtraction bar model. One bar is drawn to represent the greater quantity. A shorter bar is drawn to represent the smaller quantity. The distance from the end of the shorter bar to the end of the longer bar represents the difference in quantities. Place numbers from the story problems in the correct bar and solve.

    b. Complete Go Math Chapter 5, Lesson 6: Share and Show/On Your Own Activities.

15. **Subtract All or Zero**

    a. Complete Go Math Chapter 5, Lesson 7: Share and Show/On Your Own Activities.

16. **Take Apart Numbers**

    a. In this lesson, children break a cube train into two parts as they model all the ways to subtract from a given number. This example shows all possible ways to take apart 5. • Have children write the subtraction equation for each set of broken-off cubes. This helps to reinforce that they are subtracting from a group and not simply counting back by 1. • Children may ask how they might take apart 0 or 1. Explain to children that if they have 0, there is nothing to take apart. If they have 1, they can only take it apart into 1 and 0. It cannot be taken apart into any other whole numbers.

    b. Complete Go Math Chapter 5, Lesson 8: Share and Show/On Your Own Activities.

17. **Subtract from 10 or Less**

    a. Have children work in pairs. Give each pair one set of number cards 0–9. Have children place the cards faceup on their work area. Model for the class how to take three cards and use them to make a number equation. For example, place the cards 9, 5, and 4 in a line vertically with a line between the bottom numbers. Point to each number as you say: 9 minus 5 equals 4. Have one partner take 3 cards and align them vertically. Have the other partner say the subtraction equation the first partner created. Have both partners use counting cubes to model the subtraction equation. If the subtraction equation is not true based on the model, have the first partner use a number card to correct the original equation. Have partners repeat by switching roles so the second partner uses the number cards to create a subtraction equation.

b. Complete Go Math Chapter 5, Lesson 9: Share and Show/On Your Own Activities.

18. **Count On**
    a. Count on practice - two-color counters, and number cards 0–10. Ask a volunteer to name an addition fact that can be solved by adding 1, 2, or 3, such as 5 + 2 = _. Then demonstrate how to solve the fact using the numeral card for 5 and counters to represent 2. Say "5" aloud and then count on with the two counters as you say "6" and "7." Make sure children understand that the sum is the last number you say. Continue to practice with other number cards and counters.
    b. Complete Go Math Chapter 6, Lesson 1: Share and Show/On Your Own Activities.

19. **Add Doubles**
    a. Doubles Addition facts song (YouTube) to practice memorizing double facts.
    b. Doubles Rap (YouTube) to practice memorizing double facts.
    c. Complete Go Math Chapter 6, Lesson 2: Share and Show/On Your Own Activities.

20. **Use Doubles to Add**
    a. Show examples of how you can use what you know(doubles) to solve other problems. Show and practice the concept of doubles plus one(counting neighbors). Use white boards and counters to show how to solve addition problems using doubles plus one more.
    b. Complete Go Math Chapter 6, Lesson 3: Share and Show/On Your Own Activities.

21. **Doubles Plus 1 and Doubles Minus 1**
    a. Show examples of how you can use what you know(doubles) to solve other problems. Show and practice the concept of doubles minus one (counting neighbors). Use white boards and counters to show how to solve addition problems using doubles minus one more.
    b. Complete Go Math Chapter 6, Lesson 4: Share and Show/On Your Own Activities.

22. **Practice the Strategies**
    a. Complete Go Math Chapter 6, Lesson 5: Share and Show/On Your Own Activities.

23. **Add 10 and More**
    a. Adding combinations and doubles combinations
    Using white boards students will learn how to draw a number and divide it into two groups to make different addition sentences and doubles. Practice on white boards
    b. Complete Go Math Chapter 6, Lesson 6: Share and Show/On Your Own Activities.

24. **Make a 10 to Add**
    a. Use ten frames and counters to show an addition problem whose sum is greater than ten. First addend counters in the ten frame. Second addend counter outside the ten frame. Move counters from outside the ten frame to make a ten to show another adding combination for the original problem using the number 10.
    b. Complete Go Math Chapter 6, Lesson 7: Share and Show/On Your Own Activities.

25. **Use Make a 10 to Add**
    a. Complete Go Math Chapter 6, Lesson 8: Share and Show/On Your Own Activities.

26. **Real-World Addition Problems**
    a. Complete Go Math Chapter 6, Lesson 9: Share and Show/On Your Own Activities.

27. **Count Back**
    a. Using two-color counters, guide children to count back 3 from 10 to find 10 – 3. Have children point to the tenth counter and say the number they will begin counting back from (10). Then have children count back, one by one, as they point to each counter (9, 8, 7). Repeat with a new subtraction problem.
    b. Complete Go Math Chapter 7, Lesson 1: Share and Show/On Your Own Activities.

28. Think Addition to Subtract
    a. Show the relationship between addition and subtraction. Demonstrate how to use the three numbers to write two addition and two subtraction problems (fact family). Teach students how to decide if three numbers are a fact family, yes or no.
    b. Complete Go Math Chapter 7, Lesson 2: Share and Show/On Your Own Activities.

29. Use Think Addition to Subtract
    a. Each student will write an addition equation on their white board. Music will play and students walk around the room, when the music stops they write the flipped addition equation on the nearest board. Music starts again, this time when the music stops they write the subtraction equation that is in the fact family on the nearest board, and finally write when the music stops again they write the final subtraction equation to finish the fact family.
    b. Complete Go Math Chapter 7, Lesson 3: Share and Show/On Your Own Activities.

30. Use 10 to Subtract
    a. Complete Go Math Chapter 7, Lesson 4: Share and Show/On Your Own Activities.
    b. Use hands-on manipulatives. (Counters/ten frames)

31. Break Apart to Subtract
    a. Complete Go Math Chapter 7, Lesson 5: Share and Show/On Your Own Activities.
    b. Use hands-on manipulatives. (Counters/ten frames)

32. Use Subtraction Strategies
    a. Students will practice solving subtraction problems using counting back or counting up. They will be able to tell the strategy they used to solve the problem.
    b. Complete Go Math Chapter 7, Lesson 6: Share and Show/On Your Own Activities.

33. Real-World Subtraction Problems
    a. Complete Go Math Chapter 7, Lesson 7: Share and Show/On Your Own Activities.

  Assessments:
- **Diagnostic:**
  Computer-based assessment (IXL/Waggle)
- **Formative:**
  Teacher Observations
  Use of Math Vocabulary
  "On Your Own" Activities from Go Math
- **Summative:**
  Teacher prepared Quizzes
  Go Math Chapter Tests
  Teacher prepared Performance Tasks
- **Extensions:**
  Go Math, Problem Solving- Applications
- **Correctives:**
  Go Math, Reteach activities

Unit 3:   **Time Range in Weeks: Approximately 8 weeks**

- **Standards (by number):**
  PA Core Mathematics Standards
  CC.2.2.1.A.1,CC.2.2.1.A.2, CC.2.3.1.A.1,
  Objectives: Students will be able to: (Any objective which reaches beyond level DOK 1, includes every level up to that point.)

1. Add addends in any order. (DOK 2)
2. Use properties to add three addends. (DOK 3)
3. Strategically group numbers to add three addends (DOK 3)
4. Develop a plan and solve addition word problems. (DOK 4)
5. Record related facts within 20. (DOK 2)
6. Identify related addition and subtraction facts within 20. (DOK 3)
7. Apply the inverse relationship of addition and subtraction (DOK 4)
8. Use related facts to determine unknown numbers. (DOK 4)
9. Use a related fact to subtract (DOK 2)
10. Choose an operation and strategy to solve an addition or subtraction word problem. (DOK 4)
11. Represent equivalent forms of numbers using sums and differences within 20. (DOK 2)
12. Determine if an equation is true or false. (DOK 1)
13. Demonstrate fluency for addition and subtraction. (DOK 1)
14. Use different strategies to add and subtract within 20. (DOK 3)
15. Draw a visual model to explain step-by-step how to add tens. (DOK 1)
16. Draw a visual model to explain step-by-step how to subtract tens. (DOK 1)
17. Use a hundred chart to add by counting on by ones or by tens. (DOK 2)
18. Use visual models to add ones or tens to a two-digit number. (DOK 1)
19. Make a ten to add a two-digit number and a one-digit number. (DOK 2)
20. Use tens and ones to add two-digit numbers. (DOK 1)
21. Solve addition word problems using the strategy *draw a picture*. (DOK 1)
22. Use a hundred chart to find sums and differences. (DOK 1)
23. Identify and describe three-dimensional shapes according to defining attributes.(DOK 3)
24. Compose a new shape by combining three-dimensional shapes. (DOK 4)
25. Use composite three-dimensional shapes to build new shapes. (DOK 1)
26. Identify three-dimensional shapes used to build a composite shape using the strategy *act it out.* (DOK 4)
27. Identify two-dimensional shapes on three-dimensional shapes. (DOK 2)
28. Use defining attributes to sort shapes. (DOK 1)
29. Describe attributes of two-dimensional shapes. (DOK 3)
30. Use pattern blocks to compose new two-dimensional shapes.(DOK 1)
31. Compose a new shape by combining two-dimensional shapes. (DOK 3)
32. Make new shapes from composite two-dimensional shapes using the strategy *act it out.* (DOK 4)

Core Activities and Corresponding Instructional Methods:

1. **Add in Any Order**
   a. Complete Go Math Chapter 8, Lesson 1: Share and Show/On Your Own Activities
   b. Give students two towers of 10 connecting cubes in 2 different colors. Provide students with addition equations and have them use the connecting cubes to model the problem by changing the order of the addends.

2. **Use Properties to Add 3 Numbers**
   a. Complete Go Math Chapter 8, Lesson 2: Share and Show/On Your Own Activities
   b. Have children use connecting cubes to add three addends. Have students discuss a method for adding three addends.

3. **Practice Adding 3 Numbers**
   a. Complete Go Math Chapter 8, Lesson 3: Share and Show/On Your Own Activities
   b. Show the numeral cards 2, 6, & 8. Tell students you want to add these three numbers. What two numbers would you add first? Have students describe in their own words the strategy they used.

4. **Use Addition Strategies**
   a. Complete Go Math Chapter 8, Lesson 4: Share and Show/On Your Own Activities
   b. Tell children a story problem. Bella has 3 pencils. She gets 2 more pencils. How many pencils does she have now? Model how to draw a simple picture to solve the problem.

5. **Record Related Facts**
   a. Complete Go Math Chapter 9, Lesson 1: Share and Show/On Your Own Activities
   b. Show children the related equations 7+6=13 and 13-7=6. Use the phrase "related facts" to describe the relationship between the equations. Restate your description by using simpler words such as *the same, different* and *belong together.*

6. **Identify Related Facts**
   a. Complete Go Math Chapter 9, Lesson 2: Share and Show/On Your Own Activities
   b. Have children look at two related facts. Tell them the facts are related. Help children identify the relationships between the facts.

7. **Use Addition to Check Subtraction**
   a. Complete Go Math Chapter 9, Lesson 3: Share and Show/On Your Own Activities
   b. Show children a drawing that models a subtraction equation. Ask the children to name an addition equation that checks the subtraction.

8. **Unknown Numbers**
   a. Complete Go Math Chapter 9, Lesson 4: Share and Show/On Your Own Activities
   b. Read the following word problem aloud. As you read, have students use connecting cubes to model each step of the problem.

9. **Use Related Facts**
   a. Complete Go Math Chapter 9, Lesson 5: Share and Show/On Your Own Activities
   b. Write 7+___=11 on the board. Ask children to draw a picture that shows the addition problem. If they need assistance, suggest that they draw 11 objects and then circle 7 of those objects to find how many objects are left out.

10. **Choose an Operation**
    a. Complete Go Math Chapter 9, Lesson 6: Share and Show/On Your Own Activities
    b. Say the following sentences aloud, and have children repeat after you. ***When you subtract,***

you take some away. When you add, you put groups together. Show a drawing that represents subtraction.

11. Ways to Make Numbers to 20

   a. Complete Go Math Chapter 9, Lesson 7: Share and Show/On Your Own Activities

   b. Model 2 ways to make 9 using connecting cubes. Make sure children understand each way you can make 9. Distribute connecting cubes in three colors. Have children show two different ways to make 9.

12. Equal and Not Equal

   a. Complete Go Math Chapter 9, Lesson 8: Share and Show/On Your Own Activities

   b. Draw two squares on the board. In one square, draw 3 red circles and 2 blue circles. In the other square draw 4 red circles and 1 blue circle. Ask: Are the numbers in the circles the same or different? Are the numbers of the circles equal or not equal?

13. Facts Practice to 20

   a. Complete Go Math Chapter 9, Lesson 9: Share and Show/On Your Own Activities

   b. Model Language: I have 5 books. My friend has 9 books. How many books do we have? Ask: Will you add or subtract? Which words helped you decide?

14. Add and Subtract Within 20

   a. Complete Go Math Chapter 10, Lesson 1: Share and Show/On Your Own Activities

   b. Have children choose a strategy to solve addition and subtraction problems. Create a chart that displays the vocabulary for addition and subtraction. Have students practice using the vocabulary to explain their work.

15. Add Tens

   a. Complete Go Math Chapter 10, Lesson 2: Share and Show/On Your Own Activities

   b. Write $3 + 2 =$ _____. Show the problem with base-ten blocks. Then write $30 + 20 =$ _____. Show the problem with base-ten blocks. Explain how to find the sum. 3 tens plus 2 tens equals 5 tens. $30 + 20 = 50$. • How is adding 3 and 2 similar to adding 30 and 20? How is it different? Use the base-ten blocks to show the difference between adding tens and adding ones.

16. Subtract Tens

   a. Go Math Chapter 10, Lesson 3: Share and Show/On Your Own Activities

   b. Write $6 - 2 =$ _____. Show the problem with base-ten blocks. Then write $60 - 20 =$ _____. Show 6 tens blocks. • I start with 6 tens blocks, or 60. I take away 20, or 2 tens blocks. Take away the 2 tens. I have 4 tens, or 40, left. $60 - 20 = 40$. • How is subtracting 2 from 6 and 20 from 60 similar? How is it different? Use the base-ten blocks to show the difference between subtracting tens and subtracting ones.

17. Use a Hundred Chart to Add

   a. Complete Go Math Chapter 10, Lesson 4: Share and Show/On Your Own Activities

   b. Direct children's attention to the hundred chart. Review the "ten more" patterns on the chart by reminding children that the number below any number is ten more than that number. • What is ten more than 20? 30 Write the problem $16 + 20 =$ _____. • Find 16. What is ten more than 16? 26 What is 20 more than 16? 36 $16 + 20 = 36$.

18. Use Models to Add

   a. Complete Go Math Chapter 10, Lesson 5: Share and Show/On Your Own Activities

   b. Use base-ten blocks to build understanding in context. Write $23 + 4 =$ _____. Show the problem with base-ten blocks. Explain how to find the sum. • I can start with 23 and count on four, or I can

add the ones cubes together. 3 + 4 =7. • I have 2 tens, or 20, and 7 ones. 23 + 4 = 27. Point out that the ones blocks are counted together

19. Add 2-Digit and 1-Digit Numbers
   a. Complete Go Math Chapter 10, Lesson 6: Share and Show/On Your Own Activities
   b. Use base-ten blocks to build understanding in context. Write 26 + 7 = _____. Show the problem with base-ten blocks. Explain how to make ten to find the sum. • First I think about how many more ones I need to make 30. I need four more. Take 4 ones from 7 and the 6 ones from 26 and exchange them for a tens block. Now I have 30 and 3 more. 26 + 7 =33.

20. Use Place Value to Add
   a. Complete Go Math Chapter 10, Lesson 7: Share and Show/On Your Own Activities
   b. Have children work in pairs to illustrate 2-digit addition. Write 25 + 17 = ____. Ask pairs of children to draw lines and dots to represent the problem. Have the pairs work together to solve the problem. Ask each pair of children to explain why their answer is correct. Help them with vocabulary as needed.

21. Addition Word Problems
   a. Complete Go Math Chapter 10, Lesson 8: Share and Show/On Your Own Activities
   b. Ask children to listen carefully and rephrase problems. Read the following problem. Carter has 15 marbles. Chang has 17 marbles. How many marbles do they have in all? • What do you need to find? • What information do you need?

22. Related Addition and Subtraction
   a. Complete Go Math Chapter 10, Lesson 9: Share and Show/On Your Own Activities
   b. Children illustrate their understanding of subtracting by multiples of 10. Give children a hundred chart. Write the problem 68 – 10 = ____ on the board. Have children circle 68 on their charts and then move up one row to show subtracting 10. • What number is 10 less than 68? How did you find the answer?

23. Three-Dimensional Shapes
   a. Complete Go Math Chapter 12, Lesson 1: Share and Show/On Your Own Activities
   b. Have children handle three-dimensional shapes. Talk about the attributes of each shape. Encourage children to touch the shapes and describe them using their own words. Restate the attributes of each shape building from the children's language. Continue as time allows to name different shapes and their attributes.

24. Combine Three-Dimensional Shapes
   a. Complete Go Math Chapter 12, Lesson 2: Share and Show/On Your Own Activities
   b. Direct children's attention to the models of three-dimensional shapes. Review the names and the attributes of each shape. • Can you put two shapes together to make a new shape? Provide time for children to explore with the models. As they explore, talk about the new shapes and their attributes until children are confident in their ability to identify the shapes

25. Make New Three-Dimensional Shapes
   a. Complete Go Math Chapter 12, Lesson 3: Share and Show/On Your Own Activities
   b. Help children use prepositional phrases to describe the shapes in a construction. Model using on top, next to, and under. • The cone is on top of the cube. Show children a cube with a cone on top. Repeat using a different construction of three-dimensional shapes. Have children describe the shapes using on top, next to, and under.

26. Take Apart Three-Dimensional Shapes

    a. Complete Go Math Chapter 12, Lesson 4: Share and Show/On Your Own Activities

    b. Model concepts to help children understand word problems using three-dimensional shapes. Show children a tower using two cylinders and a cone. Show children a collection of two cubes, two cylinders, and two cones. • I have these shapes. I used some of them to make the tower. Which shapes did I use? Point to each shape in the tower one at a time and pick up the same shape from the collection of shapes. Say the name of the shape. Repeat with other constructions built from a combination of three-dimensional shapes.

27. Two-Dimensional Shapes on Three Dimensional Shapes

    a. Complete Go Math Chapter 12, Lesson 5: Share and Show/On Your Own Activities

    b. Restate the attributes of three-dimensional shapes and show models to help children build understanding. Provide each child with a cube. Ask children to trace around one face of the cube. • What shape is this? Turn the cube showing each of its six flat surfaces and ask children to name the shape. Help children understand what flat surface means through restating and modeling. Repeat with other three-dimensional shapes.

28. Classify and Sort Two-Dimensional Shapes

    a. Complete Go Math Chapter 13, Lesson 1: Share and Show/On Your Own Activities

    b. Have children illustrate their understanding of two-dimensional shapes. Draw a triangle. • This is a triangle. It has 3 sides and 3 vertices. Ask children to draw triangles. Ask them to count the three sides of the triangles they drew. • Yes, that is a triangle; it has 3 sides and 3 vertices. If the child did not draw a triangle, repeat the directions and show an example. Repeat with other shapes.

29. Attributes of Two-Dimensional Shapes

    a. Complete Go Math Chapter 13, Lesson 2: Share and Show/On Your Own Activities

    b. Restate the word vertex to help children learn how to describe attributes of two-dimensional shapes. Draw a triangle. Point to the vertex. • In math we call this a vertex. What does it look like to you? Build from the children's language to teach the word vertex. • A vertex is a corner. Repeat by pointing to other vertices on the triangle. • Triangles have three vertices or corners. Repeat with a square and a rectangle.

30. Create Two-Dimensional Shapes

    a. Complete Go Math Chapter 13, Lesson 3: Share and Show/On Your Own Activities

    b. Provide children with pattern blocks. Allow time to manipulate the blocks. As children are using the blocks, ask informal questions about the relationships of the blocks. • How many triangles make a hexagon? • How many trapezoids make a hexagon? Take time to talk about the relationships among pattern blocks with the children. Ask children to tell a partner about the relationship between two pattern blocks.

31. Compose More Shapes

    a. Complete Go Math Chapter 13, Lesson 4: Share and Show/On Your Own Activities

    b. Model thinking and language to talk about combining shapes to form a new shape. Draw a triangle. Then draw two halves of the triangle and a square. • Which two of these shapes will make this triangle? Model the language with children. • I can see the square doesn't fit. If I put these two triangles together they form this triangle. Repeat with other shapes.

32. Create New Two-Dimensional Shapes
   a. Complete Go Math Chapter 13, Lesson 5: Share and Show/On Your Own Activities
   b. Have children illustrate their understanding of making new shapes from other shapes. Give children 2 two-dimensional shapes. Ask the children to trace each shape. Then ask children to put the two shapes together to form a new shape. Have the children trace around the new shape. Help children organize into pairs. Encourage the pairs to trade shapes and the outlines they drew. Challenge the children to put the two shapes together to make the new shape.

Assessments:
   o **Diagnostic:**
      Computer-based assessment (IXL/Waggle)
   o **Formative:**
      Teacher Observations
      Use of Math Vocabulary
      "On Your Own" Activities from Go Math
   o **Summative:**
      Teacher prepared Quizzes
      Go Math Chapter Tests
      Teacher prepared Performance Tasks
   o **Extensions:**
      Go Math, Problem Solving- Applications
   o **Correctives:**
      Go Math, Reteach activities

Unit 4:   **Time Range in Weeks: Approximately 5 weeks**

- **Standards (by number):**
  PA Core Mathematics Standards
  CC.2.3.1.A.2, CC.2.4.1.A.1, CC.2.4.1.A.2, CC.2.4.1.A.4
  Objectives: Students will be able to: (Any objective which reaches beyond level DOK 1, includes every level up to that point.)
1. Identify equal and unequal parts in two-dimensional shapes. (DOK 1)
2. Separate a shape into two equal shares. (DOK 2)
3. Separate a shape into four equal shares. (DOK 2)
4. Estimate lengths using 1-inch tiles. (DOK 2)
5. Use a ruler to measure the length of an object to the nearest inch. (DOK 1)
6. Order objects by length (DOK 2)
7. Write times to the hour shown on analog clocks. (DOK 1)
8. Tell times to the hour and half hour using analog and digital clocks. (DOK 1)
9. Use the hour hand to draw and write times on analog and digital clocks. (DOK 1)
10. Analyze and compare data shown in a picture graph where each symbol represents one child. (DOK 4)
11. Collect data and complete a picture graph to represent the data. (DOK 2)
12. Analyze and compare data shown in a tally chart. (DOK 4)
13. Make a tally chart and interpret the information. (DOK 2)
14. Tell the value of a penny, a nickel, and a dime. (DOK 1)
15. Find the value of a group of coins with pennies, nickels, and dimes. (DOK 2)
16. Find the value of a group of coins that includes quarters (DOK 2)

Core Activities and Corresponding Instructional Methods:
1. Equal or Unequal Parts
   a. Draw shapes on whiteboards and have students practice dividing them equally and unequally.
   b. Complete Go Math Chapter 14, Lesson 1: Share and Show/On Your Own Activities.
2. Halves
   a. Have students make shapes out of playdoh and practice "cutting" them in half.
   b. Complete Go Math Chapter 14, Lesson 2: Share and Show/On Your Own Activities.
3. Fourths
   a. Have students make shapes out of playdoh and practice "cutting" them into fourths.
   b. Complete Go Math Chapter 14, Lesson 3: Share and Show/On Your Own Activities.
4. Estimate Lengths Using Inches
   a. Give students tiles to measure objects in their pencil boxes. Discuss the different lengths of student's pencils and crayons.
   b. Complete Go Math Chapter 15, Lesson 1: Share and Show/On Your Own Activities.
5. Measure to the nearest Inch
   a. Give students pipe cleaners, cut into different lengths, and have students practice measuring to the nearest inch with a ruler.
   b. Complete Go Math Chapter 15, Lesson 2: Share and Show/On Your Own Activities.

6. **Order Length**
   a. Give students pipe cleaners, cut into different lengths, and have students practice putting them into the correct order. Practice both shortest to longest, and longest to shortest.
   b. Complete Go Math Chapter 15, Lesson 5: Share and Show/On Your Own Activities.
7. **Time to the Hour**
   a. Have students practice drawing a clock on their whiteboards. Have them draw the hour hand, pointing to a variety of hours, to practice drawing and dictating the time (to the hour).
   b. Complete Go Math Chapter 16, Lesson 1: Share and Show/On Your Own Activities.
8. **Time to the Half Hour**
   a. Have students create a paper clock, using construction paper and brass brads. After they have been made, have students practice moving the hands to show a variety of times (to the half hour).
   b. Complete Go Math Chapter 16, Lesson 2: Share and Show/On Your Own Activities.
9. **Time to the Hour and Half Hour**
   a. Use the same student-made clocks, from the previous lesson to have students practice moving the hands to show a variety of times (to the hour and half hour).
   b. Complete Go Math Chapter 16, Lesson 3: Share and Show/On Your Own Activities.
10. **Practice Time to the Hour and Half Hour**
    a. Use the same student-made clocks, from the previous lesson to have students practice moving the hands to show a variety of times (to the hour and half hour).
    b. Complete Go Math Chapter 16, Lesson 4: Share and Show/On Your Own Activities.
11. **Read Picture Graphs**
    a. Have a variety of picture graphs ready to show and discuss with students, before the lesson.
    b. Complete Go Math Chapter 17, Lesson 1: Share and Show/On Your Own Activities.
12. **Make Picture Graphs**
    a. Have students collect data from their classmates and make their own picture graphs from the data they collected.
    b. Complete Go Math Chapter 17, Lesson 2: Share and Show/On Your Own Activities.
13. **Tally Marks**
    a. Have a variety of tally charts ready to show and discuss with students, before the lesson.
    b. Complete Go Math Chapter 17, Lesson 3: Share and Show/On Your Own Activities.
14. **Make Tally Marks**
    a. Have students collect data from their classmates and make their own tally charts from the data they collected.
    b. Complete Go Math Chapter 17, Lesson 4: Share and Show/On Your Own Activities.
15. **Pennies, Nickels, and Dimes**
    a. Distribute plastic coins for students to explore. Allow them to use math talk to discuss the different look of each coin. Bring students together to go over observations and begin identifying coins.
    b. Complete Go Math Chapter 11, Lesson 1: Share and Show/On Your Own Activities.
16. **Count Collections of Coins**
    a. Complete Go Math Chapter 11, Lesson 2: Share and Show/On Your Own Activities.
17. **Quarters**
    a. Pass out plastic coins. Add quarters, this time, and allow students to observe the difference in the new coin. Discuss observations.
    b. Complete Go Math Chapter 11, Lesson 3: Share and Show/On Your Own Activities.

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