Course: Mathematics Grade 1

Unit #1: Relating Addition and Subtraction

Grade Level(s): First Grade	**Length of Unit:** 33 days

Unit Rationale:
Students will extend their understanding of adding and subtracting numbers within 10. They will learn various strategies to solve addition and subtraction problems.

Stage 1 - Desired Results

Understandings:	**Essential Questions:**
Students will understand that… ● You can count on to solve addition and subtraction problems. ● Knowing how to read and model a problem can help you decide whether to add or subtract. ● Numbers can be broken into parts. You can use what you know about parts of numbers to help develop and choose addition and subtraction strategies. ● Real world problems can be represented with physical and visual models.	● What strategies could you use to add/subtract? ● How could you write an addition/subtraction problem to tell about this situation? ● How does this equation match this model? ● What are some ways to show <number>? ● How can you use addition to solve a subtraction problem? ● Why can you subtract to compare numbers? ● Does this story or problem make sense and why? ● Explain whether this equation is true or false. ● Which strategy helped you remember this fact?
Content: *Students will (know)…* ● Add within ten. ● Apply the “counting on” strategy to add. ● Use the count back strategy to subtract. ● Analyze counting strategies. ● Relate an image of two equal groups to doubles. ● Relate an image of two equal groups with one left over to doubles plus one. ● Write addition equations for doubles and doubles plus one. ● Use properties to write a double plus one expression (3 addends) as an expression with 2 addends. ● Use strategies such as counting-on or counting back, to add and subtract numbers up to 10. ● Determine the unknown addend that makes the	**Skills:** *Students will be able to…* ● Recognize number patterns for 10 and show them on models, as 10-frames and number bonds. ● Connect equations to physical and visual representations of number partners for 10. ● Observe that order of addends does not change the total of 10. ● Understand the meaning of actions described in addition and subtraction problems. ● Generate groups of relegated addition and subtraction facts, called *fact families*. ● Make sense of stories being told in problems anduse equations to represent problems. ● Work with change-unknown problems. ● Use fingers, counters, and connecting cubes to model

addition equation true for sums to 10. ● Add numbers in any order to find the same total. ● Understand the relationship between addition and subtraction. ● When efficient, use a “counting on” strategy to solve a subtraction problem. ● Solve addition and subtraction word problems. ● Write a missing addend equation for a corresponding subtraction equation. ● Connect addition and subtraction equations to a number bond.	the counting on strategy. ● Explain how to use the counting on strategy to add two numbers. ● Listen to the ideas of others discussing a counting error and decide together how to correct the error. ● Use visual models or counters to create equations and solve a doubles or a doubles plus one problem. ● Tell how a doubles plus one expression with 3 addends and a related doubles plus one expression with 2 addends are alike. ● Justify conclusions and communicate the conclusions to others. ● Discuss how to find different number partners for sums to 10. ● Analyze, discuss, and use visual and concrete models to find missing number partners for sums to 10. ● Describe how to complete a number bond and write equations for sums to 10. ● Draw dots and write numbers in number bonds to represent addition and subtraction equations. ● Use counters to model addition and subtraction equations. ● Find the missing number partner for 10 when one number is known. ● Describe how to record numbers partners for 10 in a number bond and use it to write up to four related addition and subtraction equations. ● Listen to and evaluate the ideas of others about how finding number partners for 10 is similar to and different from finding number partners for numbers less than 10. ● Use diagrams and number paths to show the counting on strategy to subtract. ● Identify, write and use related addition and subtraction equations to solve subtraction problems. ● Tell how counting on to subtract is similar to and different from counting on to add. ● Show and describe the actions in word problems using physical models, visual models, and symbols. ● Connect the meaning of models andy symbols to contexts of word problems. ● Analyze word problems to determine how to solve them. ● Use objects,drawings and equations to represent and solve addition and subtraction problems within 10. ● Choose strategies and tools to efficiently solve word problems within 10. ● Tell the meaning of the unknown quantity in a word problem and use this to explain where the blank goes in the related equation. ● Describe relationships among models , word problems

	and equations. ● Orally define and use the key mathematical terms *compare, more*, and *fewer* when communicating with a partner. ● Complete a bar model to show how a comparison word problem relates to a subtraction equation. ● Draw lines to align objects and identify how many more or fewer objects are in one group. ● Use connecting cubes and counters to show whether an equation is true or false. ● Draw pictures and explain whether an equation is true or false. ● Correctly use the term *equal sign* when communicating with a partner. ● Modify an equal sign by drawing a line through it to indicate when an equation is not true. ● Identify and use more than one strategy to complete addition and subtraction equations in which the unknown is located in all positions. ● Record addition facts to 10 in an addition table. ● Compare two approaches to addition or subtraction and describe how they are the same or different.

NJ Student Learning Standards - Mathematics
Content Standards: 2023 NJSLS-Mathematics (K-12)

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

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

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

1.OA.C.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 accuracy and efficiency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g.,); decomposing a number leading to a ten (e.g.,); using the relationship between addition and subtraction (e.g., knowing that , one knows); and creating equivalent but easier or known sums (e.g., adding by creating the known equivalent).

1.OA.D.8 - Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers

The Standards for Mathematical Practice:

Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.
Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:

1. Utilize critical thinking to make sense of problems and persevere in solving them
2. Work productively in teams while using cultural/global competence

Connected Careers:

Math teacher

Explanation of how 9.2 standards connect to the unit:
Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. Careers that involve budgeting or inventory management rely on quick manipulations of numbers in all operations.

Explanation of how CLKSs connect to the unit:

1. Students will need to listen carefully and make a model in order to decide if they need to add or subtract.
2. The teacher presents a problem or visual representation. Students work together to brainstorm questions that could be answered using the information given.

Explanation of how Connected Careers connect to the unit:

A math teacher must have a very strong foundation in the understanding of basic math concepts, A deep understanding of foundational math skills allows teachers to explain concepts clearly and accurately to their students. This understanding forms the basis for teaching more complex topics effectively.

Interdisciplinary Standards

RI.CR.1.1. Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).

SL.UM.1.5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

2.3.2.HCDM.1/Comprehensive Health and Physical Education: Explain the consequences on a person's health if he or she does not have adequate food and a clean environment.

Explanation of how interdisciplinary standards connect to the unit:

ELA: In their math journals, students record their understanding of a given problem and add a model to help explain their thinking. For example, when solving 5+2, students might draw a ten frame with 5 red and 2 yellow counters.

2.3.2.HCDM.1/Comprehensive Health and Physical Education: During the *Math in Action* lesson, students create fruit kebabs according to the given criteria. During the introduction to the lesson, the class will discuss how foods such as fruit are important in keeping one's body healthy and strong.

Technology Integration (9.4 Standards):

9.4.2.DC.5: Explain what a digital footprint is and how it is created.

Explanation of how 9.4 standards connect to the unit:

Throughout the year, students will use Seesaw, a digital learning platform, to record responses for a variety of math lessons. Before i-Pads are first distributed for use, students will understand how personal information saved on this site will be used to create a profile of online behavior and therefore, responses must be respectful and thoughtful.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments

Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

Lesson 1 Number Partners for 10

Session 1 Explore: Counting on to Add

- Start - Number Sense: How Many?
- Discover It -use 10-frame to find number partner for 10
- Investigate It -Use the relationship between number partners for 10 to find the missing number WB p.5
- Build Concepts - Construct meaning for concept of *number partner for 10* WB p.6
- Close: What did you discover about number partners for 10?

Session 2 Develop: Using a Bond and Counters to Represent Number Partners for 10

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: make a model to represent number partners for 10 WB p.7
- Model It - How does the model represent the problem? WB p.8
- Connect It - compare student models to Model It example
- Apply It -Find the Missing Number WB p.9-10
- Close: complte given number bond for 10
- Independent Practice - WB p.11-12

Session 3 Develop: Writing Equations for Number Partner for 10

- Start -Number Sense: Show It Another Way
- Try Discuss- Connect:connecting number bonds and equations WB p.13
- Model It - represent story problem with 10-frame and number bond WB p.14
- Connect It - compare different ways to model problem
- Apply It - Number Partner Match Upl WB p.15-16
- Close: use 10-frame to complete number bond and equation
- Independent Practice - WB p.17-18

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Tools
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:

- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:

- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons

Session 4 Refine: Finding Number Partners for 10 Using Different Tools and Strategies

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - use 2 equations to show the same number partners WB p. 19
- Apply It - WB p.20
- Close: Does the order of number partners matter when writing addition equations?
- Independent Practice - WB p.21-22

Session 5 Refine: Understanding Number Partners for 10

- Start - Number Sense: Data Talk
- Analyze It -Recall/discuss new learning WB p.23
- Apply It - WB p. 124
- Close: What ideas about number partners for 10 could you teach someone else?
- Independent Practice - WB p.25-26

Lesson Quiz - Teacher Toolbox

Comprehension Check

Lesson 2 Add and Subtract Within 10

Session 1 Explore: Determine Important Information From a Problem Situation

- Start - Number Sense: How Many?
- Discover It - act out addition and subtraction situations
- Investigate It - model what is happening in math story WB p.29
- Build Concepts: Construct meaning for concept of *math story* WB p.30
- Close: What did you discover about showing a math story?

Session 2 Develop: Modeling Addition Word Problems

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: Solve story problem in different ways WB p.31
- Model It - use 10-frame to solve story problem WB p.32
- Connect It - compare Ss models to 10 frame inModel It
- Apply It -Add and Color WB p. 33-34
- Close: model and solve addition story problem
- Independent Practice - WB p.35-36

- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students with 504 Plans:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of School Failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

Session 3 Develop: Model Word Problems Using Subtraction

- Start - Number Sense: Show It Another Way
- Try Try-Discuss-Connect: make a model for subtraction story problem WB p. 37
- Model It -use 10-frame to cross out WB p. 38
- Apply It - Subtract and Color WB p.39-40
- Close: model and solve subtraction problem
- Independent Practice: WB p. 41-42

Session 4 Refine: Model and Solve Addition Problems

- Start Number Sense: Which One Doesn't Belong
- Make Connections - deciding whether to add or subtract to solve a problem WB 43
- Apply It - WB p.44
- Close: How can you tell that an equation correctly represents a word problem?
- Independent Practice - WB p. 45-46

Session 5 Refine:

- Start Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p. 47
- Apply It - WB p.48
- Close:What ideas about adding and subtracting could you teach someone else?
- Independent Practice - WB p. 49-50

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 3 Use Counting Strategies to Add and Subtract</u>

Session 1 Explore: Count On to Add/Count Back to Subtract

- Start - Number Sense: How Many?
- Discover It -count forward and back from a given number
- Investigate It - practice counting forward and backward WB p. 53
- Build Concepts- construct meaning for concepts *count forward and count backward* WB p.54
- Close:What tips would you give for someone who wants to count forward and backward?

Session 2 Develop: Counting On as a Strategy to Add

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: count on to solve story problem WB p.55

- Discuss It - share problem solutions noting that all show same total
- Model It - connect number paths to students' models WB p. 56
- Connect It - compare student model to Model It number path
- Apply It - Flip, Spin and Add WB p. 57-58
- Close: use number path to count on to add
- Independent Practice -WB p. 59-60

Session 3 Develop: Count Back as a Strategy to Subtract

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: count back to solve story problem WB p.61
- Discuss It - review and compare models or strategies used to find total WB p. 63
- Model It - connect number path to students models WB p. 62
- Connect It - compare and contrast ways problem was solved
- Apply It - Keep on Subtracting WB p.63-64
- Close: count back to solve equation
- Independent Practice - WB p.65-66

Session 4 Refine: Count On to Add/Count Back to Subtract

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - deciding which strategy to use WB p.67
- Apply It WB p. 68
- Close: How are accounting on and counting back the same? How are they different?
- Independent Practice - WB p. 69-70

Session 5 Refine: Count On to Add/Count Back to Subtract

- Start - Number Sense: Data Talk
- Analyze It -recall/discuss new learning WB p. 71-72
- Close- What ideas about counting on to add of counting back to subtract could you teach someone else?
- Independent Practice - WB p. 73-74

Lesson Quiz - Teacher Toolbox

Comprehension Check

Lesson 4 Use Addition to Subtract

Session 1 Explore Finding Missing Addends

- Start - Number Sense: How Many?
- Discover It -show numbers as parts and whole
- Investigate It - number bonds show number relationships WB p.77
- Build Concepts - construct meaning for concept of *counting on* WB p.78
- Close:Exit Ticket -What is something new you discovered about finding a missing addend?

Session 2 Develop: Choosing Efficient Strategies

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: find the missing number in the story problem WB p. 79
- Model It-compare counting on and counting back strategies WB p.80
- Apply It -Find the Start WB p.81-82
- Close:solve equation using number path
- Independent Practice - WB p. 83-84

Session 3 Develop: Using Related Facts to Find Missing Part

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use know facts and number relationships to solve problem WB p. 85
- Model It -both addition and subtraction equations can be used to find missing part WB p.86
- Connect It - compare students' models to equation model WB p. 87
- Apply It - What Is Missing? WB p.88
- Close: use number path or number bonds to solve subtraction equation
- Independent Practice - WB p. 89-90

Session 4 Refine: Using Addition to Subtract

- Start - Number Sense: Which One Doesn't Belong
- Make Connections -choose addition or subtraction to solbe problem and explain why WB p.91-92
- Close: How can you use an addition fact to help you solve a subtraction problem?
- Independent Praactice - WB p.93-94

Session 5 Refine: Using Addition to Subtract

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p. 95
- Apply It: WB p.96

- Close: What ideas about using addition to subtract could you teach someone else?
- Independent Practice - WB p.97-98

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 5 Solve Word Problems to 10</u>

Session 1 Explore: Fact Families Are Groups of Related Equations

- Start - Number Sense: How Many?
- Discover It - connecting equations that go together
- Investigate It - use cubes and number bonds to write fact families WB p.101
- Build Conceots - Construct meaning for concept of *fact family*
- Close: How can number bonds help you write equations in a fact family?

Session 2 Develop: Use Models to Represent Add-to Problems with Change Unknown

- Start - use counters to find missing addends of 10
- Try-Discuss-Connect:write an equation to solve the story problem WB p.103
- Model It - WB p. 104
- Connect It - compare and contrast students' models to equation model
- Apply It - How Did It Change? solve add to problems with unknown addend WB p.105-106
- Close: use manipulatives to solve add-to word problem with change unknown
- Independent Practice - WB p. 107-108

Session 3 Develop: Solve Take-from Problems with Change Unknown

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use read, draw, write to solve story problem WB p.109
- Model It -share student models WB p. 110
- Connect It - compare student models toModle It number bond and equation model WB p.110
- Apply It - read It, Draw It, Write It, Solve It WB p. 111-112
- Close: use manipulatives to solve take-from problems with change unknown
- Independent Practice - WB p. 113-114

Session 4 Refine: Solve Word Problems to 10

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - explain how different objects, drawings, and equations can help solve word problems WB p. 115
- Apply It - WB p.116
- Close:How do you decide how to solve a word sproblem? What strategies do you use to add or subtract?
- Independent Practice - WB p. 117-118

Session 5 Refine: Solve Word Problems to 10

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p.119
- Apply It - WB p.120
- Close:What ideas about solving word problems could teach someone else?
- Independent Practice: WB p. 121-122

Lesson Quiz - Teacher Toolbox

Comprehension Check

Math in Action: Make Fruit Snacks WB p.23-126

Self Reflection WB p.127

Unit Review WB p.128-130

Unit Assessment (Teacher Toolbox)

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 1 Curriculum Associates.

Teacher Toolbox

- Digital Mathtools
- i-Ready Lessons
- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center

- Multilingual Glossary

Motivational Books

- Quack and Count by Keith Baker
- Domino Addition by Lynette Long
- If You Were a Plus Sign by Trisha Speed Shaskan
- The Hershey's Kisses Subtraction Book by Jerry Pallotta
- Ten Flashing Fireflies by Philemon Sturges
- Animals on Board by Stuart Murphy

Student Materials:

Ten frames/counters
Ten trains
1-10 number lines
2 sided colored counting beans
Die with pips and numbers

i-Ready: My Path individualized practice program

Games

- Add to 10 Bingo! TG p.228
- Hungry Guppy (i-Ready)
- Hungry Fish (i-Ready)
- Match (i-Ready)

Notes:
Inclusion of Climate Change Opportunities

(See Unit 3: Solving Word Problems and Making Comparisons)

Course: Mathematics Grade 1

Unit #2: Addition and Subtraction Within 20

Grade Level(s): First Grade	**Length of Unit:** 28 days

Unit Rationale:
Students will extend their understanding of adding and subtracting numbers within 20 using a variety of strategies, including make a ten, doubles, and near doubles. Their understanding of place value will continue to develop as they add and subtract by grouping the two-digit number as a 10 and ones.

Stage 1 - Desired Results

Enduring Understandings:

Students will understand that…

- 10 ones can be thought of as a group of 10, called a *ten*
- Ten is a useful benchmark that makes adding easier.
- Teen numbers are made up of a ten and some ones.
- Numbers can be put together and broken apart in different ways.
- You can use what you know about adding and subtracting up to 10 to add and subtract up to 20

Essential Questions:

- Which strategy worked best for you in this addition/subtraction problem?
- Can you explain how the symbols in this addition/subtraction story problem relate to the number equation?
- Does this answer make sense and why?
- How can you find the missing number in an addition/subtraction equation?

Content:

Students will know…

- Understand and apply the strategy of decomposing a single digit number to get to 10 when subtracting it from a teen number
- Use and articulate mental math strategies to subtract based on familiar addition strategies.
- Use strategies including counting on. doubles, doubles plus 1, and make a ten to solve addition problems.
- Recognize different ways that addends can be composed and decomposed.
- Use properties to write a doubles plus one expression (3 addends) as an expression with 2 addends.
- Write addition expressions with three addends to represent word problems.
- Find the total of 3 addends, using strategies such as making a ten and using doubles by grouping any two addends.
- Use the associative and commutative properties to group addends strategically in order to use addition strategies or known facts.
- Recognize that teen numbers can be decomposed and composed to subtract.

Skills:

Students will be able to…

- Compose and decompose teen numbers into a ten and some ones with concrete objects and other visual representations, as well as with words and numbers
- Tell the meaning of each digit a teen number.
- Find the total of three addends using strategies such as finding number partners for 10 and using doubles facts by grouping any two addends.
- Understand that breaking apart numbers and putting them together in a new way does not change the value.
- Consider *making a ten* when choosing a strategy to add.
- Begin to use *make a ten* as a mental math strategy.
- Use 10 as a benchmark number when subtracting from teen numbers in parts.
- Show doubles as two equal groups, and how near doubles are related to doubles.
- Find totals for doubles facts within 20.
- Use doubles facts to solve near doubles facts within 20.
- Use visual or concrete models to write equations and solve a doubles or a doubles plus one problem.

● Choose strategies to use when adding within 20. ● Choose strategies to subtract single-digit numbers from teen numbers. ● Find the missing number in an addition or subtraction equation (missing number in all positions). ● Use familiar number facts and strategies to help find a missing number in an addition or subtraction equation. ● Use related addition and subtraction facts to solve for an unknown number in an equation. ● Explain how to choose an appropriate strategy to solve a particular word problem. ● Relate addition and subtraction equations to word problems and choose strategies to solve them. ● Solve addition and subtraction word problems within 20 with unknowns in all positions.	● Use number paths to decompose teen numbers to make a ten to subtract. ● Explain how to use a number path and 10-frames to add two whole numbers with a sum up to 20. ● Write numbers in a number bond to show a sum. ● Read an equation with the equal sign in any position. ● Write an equation with a missing number to represent a word problem situation. ● Describe the relationship among word problems, models, and equations.

NJ Student Learning Standards - Mathematics
Content Standards: 2023 NJSLS-Mathematics (K-12)

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 a bundle of ten ones — called a "ten."
b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

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

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

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

1.OA.D.8 - Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers

The Standards for Mathematical Practice:

Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.

Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:

1. Use technology to enhance productivity increase collaboration and communicate effectively
2. Utilize critical thinking to make sense of problems and persevere in solving them

Connected Careers:
Actuary

Explanation of how 9.2 standards connect to the unit:
Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. Careers that involve budgeting or inventory management rely on quick manipulations of numbers in all operations.

Explanation of how CLKSs connect to the unit:

1. Students practice fact fluency using XtraMath, an online site for independent fact drill and practice. The ability to quickly solve basic facts while facilitate future mathematical problem solving activities.
2. In this unit, students learn a variety of strategies to solve addition and subtraction facts within 20. When presented with a problem, students use critical thinking to decide which computational strategy would work best to solve the problem..

Explanation of how Connected Careers connect to the unit:
In this unit, students develop competency in fluently adding and subtracting numbers. Actuaries use mathematics to assess risk in insurance, finance, and other industries. Their work involves complex calculations to predict future events and financial outcomes.

Interdisciplinary Standards

W.IW.1.2. With prompts and support, write informative/explanatory texts to examine a topic and convey ideas and information.

6.1.2.HistoryUP.2: Use evidence to demonstrate how an individual's beliefs, values, and traditions may change and/or reflect more than one culture.

Explanation of how interdisciplinary standards connect to the unit:

W.IW.1.2. Math journals, which are used throughout the year, give students the opportunity to explain and record their thinking using words and mathematical models.

6.1.2.HistoryUP.2: In lesson 10, the motivational theme of games can be used as a springboard for a discussion on favorite family games. This can connect with and leverage the diverse backgrounds and experiences of children.

Technology Integration (9.4 Standards):

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools

Explanation of how 9.4 standards connect to the unit:

9.4.2.TL.6: In addition to math journals, students also use the Seesaw digital learning platform as a means of sharing their understanding of a taught concept or skill by creating a digital model to support the problem given and then orally documenting their thinking.

Stage 2- Assessment Evidence:

Assessment:

Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments
Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

Lesson 6 Teen Numbers

Session 1 Explore Grouping Objects Makes Them Easier to Count

- Start - Number Sense: How Many?
- Discover It -ten ones can be a unit: a *ten*
- Investigate It - organizing loose objects into groups can help when counting WB p.135
- Build Concepts - construct meaning for the concept *a group of 10* WB p.136
- Close: Why is it helpful to make groups when you are counting?

Session 2 Develop Compose a Teen Number as a Ten and Some More Ones

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: how many different teen numbers can you make with a ten and some ones? WB p. 137
- Model It - use a ten frame to model teen numbers WB p. 138
- Connect It - compare 10-frame models in Model It to student models WB p. 138
- Apply It - Roll to Make Teen Numbers WB p.139-140
- Close: name teen number described
- Independent Practice - WB p. 141-142

Session 3 Develop: Decompose Teen Number into Ten and Some More Ones

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: breaking apart a teen number WB p. 143
- Model It - WB p.144
- Connect It - compare student models to number bond and connecting cubes in Model It
- Apply It -Break Apart Teen Numbers WB p.145-146
- Close: decompose teen number into ten and some ones
- Independent Practice - WB p.147-148

Session 4 Refine: Composing and Decomposing Teen Numbers

- Start - Number Sense: Which One Doesn't Belong
- Make Connections- using tens and ones to make

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Toos
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:

- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:

- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving

and take apart teen numbers WB p.149-150
- Close:What does the 1 in 13 mean? What does the 3 in 13 mean?
- Independent Practice - WB p.151-152

Session 5 Refine: Composing and Decomposing Teen Numbers
- Start - Number Sense: Data Talk
- Analyze It: Recall/discuss new learning WB p.153
- Apply It - WB p.154
- Close - What could you teach someone else about tens and ones? What ideas about showing teens could you teach?
- Independent Practice - WB p.155-156

Lesson Quiz (Teacher Toolbox)

Comprehension Check

<u>Lesson 7 Add Three Numbers</u>

Session 1 Explore: Changing the Order of Addends When Using Three Numbers
- Start - Number Sense: How Many?
- Discover It - What happens when you change the order of addends? (use counting cubes)
- Investigate It - practice doubles facts and number partners for 10 WB p. 159
- Build Concepts - Construct meaning for the concept *addend* WB p.160
- Close: Use the term *addend* to describe today's math lesson

Session 2 Develop: Strategies for Adding Three Addends
- Start - Number Sense: Quick Images
- Try-Discuss-Connect: grouping three numbers to add WB p. 161
- Model It - discuss rationale for grouping addends in Model It example WB p.162
- Connect It - compare and contrast students' strategies for grouping addends
- Apply It - Color It: Number Partners for 10 WB p 163-164
- Close: use number partners for 10 to add three numbers
- Additional Practice - WB p.165-166

Session 3 Develop: Additional Strategies for Adding

- Workstations for struggling students

Students with 504 plans:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of school failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

Three Numbers

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: what other ways can numbers be grouped to solve a problem? WB p.167
- Model It - doubles facts can be used for grouping WB p.168
- Connect It - compare and contrast students' models to Model It model
- Apply It - Color It: Doubles WB p.169-170
- Close: use a doubles fact to add three numbers
- Independent Practice - WB p. 171-172

Session 4 Refine: Choosing Strategies for Adding Three Numbers

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - choose strategy for adding groups of three numbers WB p. 173
- Apply It - WB p. 174
- Close: What strategies have you learned to help you add three numbers?
- Independent Practice - WB p.175-176

Session 5 Refine: Strategies for Adding Three Numbers

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p.177
- Apply It - WB p.178
- Close: What ideas about adding three numbers could you teach someone else?
- Independent Practice - WB p. 179-180

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 8 Make a Ten to Add</u>

Session 1 Explore: Break Apart an Addend to Make a Ten

- Start - Number Sense: How Many?
- Discover It - make a ten when one addend is given
- Investigate It - How many are left over when you make a ten? WB p. 183
- Build Concepts - construct meaning ofr the concept of *make a ten* WB p.184
- Close - How did 10-frames help you show 10 and some more?

Session 2 Develop: Break an Addend into Parts to Make a Ten

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: make a ten to solve story problem WB p.185
- Model It - show how 10-frame model can be used to break addend to make a 10 WB p.186
- Connect It - compare and contrast students' models to 10-frame model
- Apply It - Choose and Roll to Add WB p.187-188
- Close: make a ten by decomposing one addend
- Independent Practice - WB p.189-190

Session 3 Develop: Breaking an Addend into Two Parts to Make a Ten

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use number bonds to show making a ten to solve problems WB p. 191
- Model It - p.WB p.192
- Connect It - compare and contrast students' models to number bond model
- Apply It -Show Making a Ten on Number Bonds WB p.193-194
- Close:solve equation by decomposing an addend to make a ten
- Independent Practice - WB p.195-196

Session 4 Refine: Making a Ten to Add with Different Strategies

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - apply and explain strategies used to make a ten to add WB p.197
  Apply It - WB p.198
- Close:What does it mean to make a ten to add?
- Independent Practice WB p.199-200

Session 5 Refine: Making a Ten to Add

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p.201
- Apply It - WB p.202
- Close:What ideas about making a ten to add could you teach someone else?
- Independent Practice - WB p. 203-204

Lesson Quiz - Teacher Toolbox

Comprehension Check

Lesson 9 Use a Ten to Subtract

Session 1 Explore: Using a Ten to Subtract

- Start - Number Sense: How Many?
- Discover It - How many are left when you subtract from 10?
- Investigate It - use number partners for 10 to write fact families WB p.207
- Build Concepts - construct meaning for concept *subtract from 10* WB p.208
- Close: How can addition facts help you subtract from 10?

Session 2 Develop: Subtract from Teen Using 10 as a Benchmark

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: strategies for subtracting from a teen number WB p.209
- Model It - subtract to get to 10, then subtract some more WB p.210
- Connect It - compare and contrast students' models to 10 frame model
- Apply It - Break It Apart! WB p.211-212
- Close: solve equation by using a ten to subtract from a teen
- Independent Practice - WB p. 3213-214

Session 3 Develop: Using a Ten to Subtract

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect:using a ten to subtract from a teen WB p.215
- Model It - use number path to show subtracting to 10 from teen WB p.216
- Connect It - compare and contrast students' models to number path and related equations
- Apply It - What Is My Move? WB p.217-218
- Close:solve equation by breaking apart number to be subtracted to first subtract to ten and then subtract the rest
- Independent Practice - WB p.219-220

Session 4 Refine: Using a Ten to Subtract From Teen

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - apply and explain strategies for using 10 as benchmark to subtract from teen number WB p. 221
- Apply It - WB p.222
- Close: What have you learned about subtracting in parts that you could teach someone else?

- Independent Practice - WB p.223-224

Session 5 Refine: Using a Ten to Subtract in Parts

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p.225
- Apply It - WB p.226
- Close: How can subtracting to get to 10 help you subtract from teen numbers?
- Independent Practice - WB p. 227-228

Lesson Quiz - Teacher Toolbox

Comprehension Check

Lesson 10 Doubles and Near Doubles

Session 1 Explore: Patterns with Doubles

- Start - Number Sense: How Many?
- Discover It - noticing doubles in real-world context
- Investigate It - noticing patterns with doubles facts WB p.231
- Build Concepts - construct meaning for concept of *doubles* WB p. 232
- Close:What did you discover about doubles?

Session 2 Develop: Using Doubles to Add

- Start - Number Sense: Quick Images
- Try-Discuss-Connect:looking for doubles can help solve a problem WB p.233
- Model It - notice doubles and double plus 1 in model and equation WB p.234
- Connect It - discuss how doubles and doubles plus 1 are related
- Apply It -Spin and Add WB p.235
- Close: solve equation using doubles to add
- Independent Practice - WB. p.237-238

Session 3 Develop: Choosing a Strategy to Solve a Problem

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect:choosing a strategy to solve a story problem WB p.239
- Model It - show how doubles plus 1 strategy helps solve problem WB. p. 240
- Connect It - compare and contrast strategies used
- Apply It - Add the Dots WB p.241-242
- Close:apply and explain strategy used to solve addition equation

- Independent Practice - WB p243-244

Session 4 Refine: Using Doubles and Other Strategies to Add

- Start - Number Sense: Which One Doesn't Belong Make Connections apply and explain strategies for adding near doubles WB p.245
- Apply It - WB p.246
- Close - What are some ways you can show how to use doubles to help you add?
- Independent Practice - WB p.247-248

Session 5 Refine: Choosing Reasonable Strategies to Solve Problems

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p.249
- Apply It - WB p.250
- Close:How could you explain how doubles can help you add?
- Independent Practice - WB p.251-252

Math In Action: Plan Camp Activities WB p. 253-256

Lesson Quiz - Teacher Toolbox

Comprehension Check

Self-Reflection WB p.257

Unit Review WB p. 258 -260

Unit Assessment (Teacher Toolbox)

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 1 Curriculum Associates.

Teacher Toolbox

- Digital Mathtools
- i-Ready Lessons

- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center
- Multilingual Glossary

Motivational Books

- Two of Everything by Lily Toy Hong
- 12 Ways to Get to 11 by Eve Merriam
- If You Were a Minus Sign by Trisha Speed Shaskan

Student Materials:

Ten frames/counters
Ten trains
1-20 number lines
2 sided colored counting beans
10-sided die

i-Ready: My Path individualized practice program

Games

- Unit Game - Team Number Totals TG p.424
- Hungry Guppy (i-Ready)
- Hungry Fish (i-Ready)
- Match (i-Ready)
- Add to 10 Bingo! TG p.228
- Walk the Plank
- Doubles Factster or Shipster
- Race to 20

Notes:
Inclusion of Climate Change Opportunities

(See Unit 3: Solving Word Problems and Making Comparisons)

Course: Mathematics Grade 1

Unit #3: Solving Word Problems and Making Comparisons

Grade Level(s): First Grade	**Length of Unit: 23 days**

Unit Rationale: This unit introduces children to word problems, data and equations. Using previously learned strategies for addition and subtraction, students will solve word problems that include numbers between 10 and 20.

Stage 1 - Desired Results

Enduring Understandings:

Students will understand that…

- The equal sign is a symbol that describes the relationship between quantities..
- Addition and subtraction relationships can find difference between quantities.
- Questions can be answered by collecting, representing and comparing data.
- Objects, drawings, numbers, and symbols can be used to show your thinking about word problems.

Essential Questions:

- How can I relate stories to missing and known values?
- Which strategies should I choose to solve equations?
- How can I use related equations to check my work?
- How can you organize data in order to compare group quantities?

Content:

Students will know…

- The equal sign connects two quantities with the same value.
- Solve difference-unknown compare problems to find how many more of fewer.
- Solve bigger-unknown and smaller-unknown compare problems to find the unknown quantity.
- Collect and organize data and represent the data with charts and graphs.
- Solve both sides of an equation to determine if it is true or false.
- Find the unknown number in any position in an addition or subtraction equation.

Skills:

Students will be able to…

- Relate stories to known and missing values. Represent them using equations.
- Choose strategies to solve equations.
- Use related equations to help check work.
- Use concrete and visual models to represent compare situations.
- Use related addition and subtraction equations to solve compare word problems.
- Define meaningful categories for a given set of objects and sort the objects according to the categories.
- Represent categorical data using tally charts, charts with numbers, and pictures.
- Analyze a data set to make sense of it and ask and answer questions about it.
- Compare quantities represented in charts and graphs.

NJ Student Learning Standards - Mathematics

Content Standards: 2023 NJSLS-Mathematics (K-12)

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

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

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

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

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

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

The Standards for Mathematical Practice:

Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.
Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:

1. Work productively in teams while using cultural/global competence
2. Demonstrate creativity and innovation

Connected Careers:

Data scientist

Explanation of how 9.2 standards connect to the unit:
Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. In this unit, concepts of data analysis can be used in statistics and financial planning.

Explanation of how CLKSs connect to the unit:

1. Students work in collaborative groups to create a survey, poll classmates and then create a related visual such as bar graph, pictograph, or pie graph (extension) to demonstrate their results. Students are expected to be sensitive to the uniqueness and differences of all students in their group and work cooperatively to accomplish the activity.
2. In the Math in Action lesson, students work cooperatively in partnerships to design an park, given certain parameters. This open-ended project allows for many possible creative versions.

Explanation of how Connected Careers connect to the unit:

In this unit, students learn how to collect data, organize, and analyze data. Data scientists transform raw data into a usable format and create visual representations of data that can be easily understood by stakeholders.

Interdisciplinary Standards

RI.CR.1.1. Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).

W.IW.1.2. With prompts and support, write informative/explanatory texts to examine a topic and convey ideas and information.

W.RW.1.7. Engage in discussion, drawing, and writing in brief but regular writing tasks.

Explanation of how interdisciplinary standards connect to the unit:

ELA: During board math activities, students are invited to share their solutions to given problems on the whiteboard. The different strategies used are compared and contrasted.

Technology Integration (9.4 Standards):

9.4.2.IML.2: Represent data in a visual format to tell a story about the data

Explanation of how 9.4 standards connect to the unit:
9.4.2.IML.2: In lessons 13, students use tally charts, pictographs, and bar graphs (extension activity) to represent data

visually. Students then answer questions from the information presented.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments
Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

<u>Lesson 11 Solve Word Problems to 20</u>

Session 1 Explore Solving Word Problems to 20

- Start - Number Sense: How Many?
- Discover It - What information does the story problem give you? What do you need to find out?
- Investigate It - create a story problem and model it WB p.265
- Build Concepts - Construct meaning for concepts of *tell* and *show a word problem* WB p.266
- Close:What did you do to model themath action?

Session 2 Develop Solving Word Problems to 20 for Add to Change Unknown Problems

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Toos
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant

- Start - Number Sense: Quick Images
- Try-Discuss-Connect:find the missing addend in story problem WB p.267
- Model It -solve problem using number path WB p.268
- Connect It - compare and contrast equations and number path model to students' models, show how addition and subtraction can be used to solve
- Apply It - Spin and Find a Missing Number WB p.269-270
- Close:solve add-to problem with change unknown
- Independent Practice - WB p.271-271

Session 3 Develop: Solving Word Problems to 20 for Take-From with Change Unknown Problems

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use equation to model story problem WB p.373
- Model It - show how both addition and subtraction can be used to solve WB p.374
- Connect It - compare and contrast number paths and equations to students' models
- Apply It - Spin and Solve WB p.275-276
- Close:solve take-from problem with change unknown
- Independent Practice - WB p.277-278

Session 4 Refine: Solving Word Problems to 20

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - apply and explain strategies used to solve word problems WB p.279
  Apply It - WB p.280
- Close: What do you do to make sense of a word problem? What tools do you like to use to solve word problems?
- Independent Practice - WB p.281-282

Session 5 Refine: Using Addition andSubtraction to Solve Word Problems to 20

- Start - Number Sense: Data Talk
- Analyze It -recall/discuss new learning WB p.283
- Apply It - WB p. 284
- Close:What ideas about solving word problems up to 20 could you teach someone else?
- Independent Practice - WB p.285-286

Lesson Quiz - Teacher Toolbox

Comprehension Check

- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:

- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:

- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students with 504 plans:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant

Lesson 12: Solve Compare Problems

Session 1 Explore:Concept of Difference

- Start - Number Sense: How Many?
- Discover It - find the missing piece that fills the space between two lengths
- Investigate It - What does the difference between 2 lengths look like? WB p.289
- Build Concepts - construct meaning for the concept *compare* WB p. 290
- Close:What did you notice when you compared the bars?

Session 2 Develop: Solve Compare Problems to Find a Difference

- Start - Number Sense: Quick Images
- Try-Discuss-Connect:use comparing to help solve problem WB p.291
- Model It -show how bar model can be used to find difference WB p. 292
- Connect It - compare student models to bar model
- Apply It -How Many More or Fewer? WB p.293-294
- Close: compare to solve story problem
- Independent Practice - WB p.295-296

Session 3 Develop: Solve Compare Problems to Find an Unknown Quantity

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect:solve compare problem to find unknown quantity using drawing or model WB p.297
- Model It -connect bar model to drawomg WB p. 298
- Connect It -compare student models to bar model and equations
- Apply It - Spin and Solve Compare Problems WB p. 299-300
- Close:solve compare model using tools, as needed
- Independent Practice - WB p. 301-302

Session 4 Refine: Using Models to Represent Compare Problems

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - apply and explain strategies for solving compare problems WB p. 303
- Apply It - WB p.304
- Close: How does using a bar model help you organize the information you know?
- Independent Practice - WB p.305-306

- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of school failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

Session 5 Refine: Solving Compare Problems

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB p. 307
- Apply It - WB p.308
- Close: What ideas about solving compare problems could you teach someone else?
- Independent Practice - WB p.309-310

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 13: Collect and Compare Data</u>

Session 1 Explore: Sort and Count Objects

- Start - Number Sense: How Many?
- Discover It - sort objects into categories
- Investigate It - sort objects in a variety of ways WB p. 313
- Build Concepts - construct meaning for the concept *sort* WB p.314
- Close: How does sorting objects into groups help you to answer questions about the objects

Session 2 Develop:Representing Data Sets with Picture Graphs

- Start - Number Sense: Quick Images
- Try-Discuss-Connect:use a picture graph to compare data
- Model It - explore use of picture graph to organize information WB p. 316
- Connect It -make sense of picture graph by comparing to student models
- Apply It - Collect and Graph WB p.317-318
- Close: compare data on a picture graph to find difference
- Additional Practice - WB p. 319-320

Session 3 Develop: Represent and Compare Data Sets with Tally and Number Charts

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect:use tally chart and numbers to compare data WB p.321
- Model It - discuss what tally marks on chart represent WB p. 322
- Connect It -compare student charts to Model It charts
- Apply It - Survey and Graph WB p.323-324
- Close: interpret data on tally chart to determine how many more

- Independent Practice - WB p.325-326

Session 4 Refine: Ideas About 10 More and 10 Less

- Start - Number Sense: Which One Doesn't Belong
- Make Connections - organize data in picture graph and tally chart WB p.327-328
- Close:Do you prefer to use picture graphs or tally charts to organize data? Why?
- Independent Practice - WB p. 329-330

Session 5 Refine:

- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p.331
- Apply It - WB p. 332
- Close - What ideas about picture graphs and tally charts could you teach someone else?
- Independent Practice - WB p. 333-334

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 14: True and False Equations</u>

Session 1 Explore: Make Groups That Show the Same Quantity

- Start - Number Sense: How Many?
- Investigate It - WB p.357
- Build Concepts - construct meaning for concept of *equal* WB p.358
- Close: What is something new you discovered about quantities? (Do not need to look the same)

Session 2 Develop: Recognize True and False Equations

- Start - Number Sense: Quick Images
- Try-Discuss-Connect:deciding if 2 sides of an equation are equal WB p. 359
- Model It use connecting cubes to model each side of equation anc compare WB p. 340
- Connect It - compare student models to cube trains and equations
- Apply It - True or False? WB p. 341-342
- Close: determine if equation is true or false, describe strategy used
- Independent Practice - WB p. 343-344

Session 3 Develop:Finding Missing Numbers in Equations

- Start - Number Sense: Show It Another Way

- Try-Discuss-Connect: write equations to find the missing number WB p.345
- Model It - connect number bond model to addition equation WB p. 346
- Connect It - compare students' models to given number bond model
- Apply It -Missing Match WB p. 347-348
- Close: find unknown number to make equation true
- Independent Practice - WB p. 349-450

Session 4 Refine:Finding Missing Numbers in Equations

- Start - Number Sense: Which One Doesn't Belong
- Make Connections -using fact families to write equations and find missing numbers WB p .351
- Apply It -WB p .352
- Close:How do you know if a missing number makes an equation true?
- Additional Practice - WB p. 353-354

Session 5 Refine:Finding Missing Numbers in Equations

- Start - Number Sense: Data Talk
- Alalyze It - recall/discuss new learning WB p. 355
- Apply It - WB p.356
- Close: What did you learn about equations that you can teach someone else? What do you think the term *balanced equation* might mean?
- Independent Practice - WB p.357-358

Lesson Quiz - Teacher Toolbox

Comprehension Check

Math In Action - WB p.359-362

Self Reflection WB p.363

Unit Review WB p. 364-366

Unit Assessment (Teacher Toolbox)

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 1 Curriculum Associates.

Teacher Toolbox

- Digital Mathtools
- i-Ready Lessons
- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center
- Multilingual Glossary

Classroom Graphs:

- birthday graph
- tooth graph
- weather graph

Motivational Books:

Lemonade for Sale by Stuart Murphy
The Great Graph Contest by Loreen Leedy

Student Materials:

Ten frames/counters
Ten trains
1-20 number lines
10-sided die

i-Ready: *My Path* individualized practice program

Games

- Unit Game - Team Number Totals TG p.424
- Hungry Guppy (i-Ready)
- Hungry Fish (i-Ready)
- Match (i-Ready)
- Add to 10 Bingo! TG p.228
- Walk the Plank
- Doubles Factster or Shipster
- Race to 20

Notes:

Inclusion of Climate Change Opportunities

1.DL.A.1 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.

Students may ask and answer questions about snack objects that may be reused, objects that may be recycled, and objects that must be placed in the trash. Students then organize the day's snack objects into those categories and create a bar and/or picture graph using the tallied resultsFollow-up questions lead students to analyze the results and determine category subtotals, total number of objects, y, and how many more or fewer are in one category than in another.

Course: Mathematics Grade 1

Unit #4: Using Tens and Ones to Organize and Count

Grade Level(s): First Grade	**Length of Unit:18 days**

Unit Rationale:
This unit introduces children to two-digit numbers as tens and ones.

Stage 1 - Desired Results

Enduring Understandings:	**Essential Questions:**
Students will understand that… ● Two digit numbers are made of tens and ones ● Knowing about tens and ones can help you read, write and understand the value of a number, ● You can use number patterns to help you find 10 more and 10 less than a number. ● You can use what you know about tens and ones in two-digit numbers to compare their values	● Why are two-digit numbers expressed as tens and ones? ● What are ways to compare 2 two-digit numbers? ● What patterns can you find on a 100 chart?
Content: *Students will (know)…* ● Organize 10 ones into a group of ten. ● Organize concrete objects by tens and ones.	**Skills:** *Students will be able to…* ● Make connections between concrete objects and visual representation of tens and ones. ● Understand that the digits of a two-digit number

● Count organized objects by counting by 10's and then counting on by 1's. ● Count by 10's within 120. ● Mentally identity 10 more of 10 less from any two-digit number. . ● Read, write and count on from any number up to 120. ● Write the symbol <, >,and = to compare 2 two-digit numbers.	represent numbers of tens and ones. ● Recognize patterns in the 120 chart that show relationships between numbers; in particular, notice how the counting patterns repeat after 100. ● Understand that 10 more or 10 less than a number results in a change in the tens digit, but the ones digit remains the same. ● Understand the meaning of the symbols < and >. ● Use place value to compare two-digit numbers. ● Use quick drawings and base-ten blocks to model two-digit numbers in comparison problems.

NJ Student Learning Standards - Mathematics
Content Standards: 2023 NJSLS-Mathematics (K-12)

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.2a. 10 can be thought of as a bundle of ten ones — called a "ten."
1.NBT.B.2b. 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.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

1.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.

The Standards for Mathematical Practice:

Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.
Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:
1. Utilize critical thinking to make sense of problems and persevere in solving them
2. Use technology to enhance productivity increase collaboration and communicate effectively

Connected Careers:
Data analyst

Explanation of how 9.2 standards connect to the unit:
Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. In this unit, the ability to compare numbers in important in careers such as science research, business, and economics.

Explanation of how CLKSs connect to the unit:

1. Using a 120 number chart, students will determine the different patterns that show relationships between numbers. These patterns might include patterns of ones place digits and tens place digits, counting by 2's, 5's, and 10's and how the patterns repeat after 100.
2. Students use the digital base-ten blocks on the i-Ready app to practice creating numbers to 120. As a turn and talk activity, students check each others' responses, and if they do not match, discuss where the error(s) is and correct.

Explanation of how Connected Careers connect to the unit:

The ability to notice numeric patterns is crucial in various careers, especially those that involve analysis, problem-solving, and prediction. Data analysts examine data sets to identify trends and patterns which helps organizations make informed decisions.

Interdisciplinary Standards

SL.UM.1.5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

1-LS1-2/Science Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

Explanation of how interdisciplinary standards connect to the unit:

ELA: During this unit, students use ones and tens manipulatives to show their understanding of place value in numbers to 120. These models are then transferred to their written work to help clarify their answers.

1-LS1-2/Science: After reading the selected text, *Earwigs,* students will discover how the earwig cares for its young and protects itself. They will then use their understanding of tens and one to complete the related math problems.

Technology Integration (9.4 Standards):

9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments.

Explanation of how 9.4 standards connect to the unit:

Students have opportunities to provide digital feedback on classmates' Seesaw posts. A class discussion helps students understand which kinds of comments are helpful and which are hurtful. Through the unit, examples of positive comments are shared with the class.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments
Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

<u>Lesson 15: Read and Write Numbers to 100</u>

Session 1 Explore: Reading and Writing Two-Digit Numbers

- Start - Number Sense: How Many?
- Discover It - say and write two-digit numbers
- Investigate It - seeing patterns in two-digit numbers and their place in a 100 chart WB p.371
- Build Concepts - construct meaning for the concept *digit* WB p. 372
- Close: What did you discover about two-digit numbers?

Session 2 Develop: Counting Two-Digit Number of Objects

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: organize objects for find out how many there are WB p.373

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Tools
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant

- Model It - show how to keep track when counting by ones WB. p. 374
- Connect It - compare student models to Model It strategy
- Apply It - Count Tens and Ones WB p.375-376
- Close: determine how many cubes by circling groups of 10
- Independent Practice - WB p. 377-378

Session 3 Develop: Writing Two-Digit Numbers as Tens and Ones

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: break apart a number into tens and ones WB p.379
- Model It - connect value of each digit to related equation
  WB p. 380
- Connect It -compare cubes to value of digits and related equation
- Apply It - Spin and Show a Number WB p.381-382
- Close: write the number of tens and ones two ways
- Independent Practice - WB p. 383-384

Session 4 Refine: Ideas About Tens

- Start - Number Sense: Which One Doesn't Belong
- Make Connections to - write and show two-digit numbers as tens and ones WB p.385
- Apply It - W B p. 386
- Close:How are your ways of showing a two-digit number alike? How are they different?
- Independent Practice - WB p.387-388

Session 5 Refine: Representing Two-Digit Numbers as Tens and Ones

- Start - Number Sense: Data Talk
- Analyze It -recall/discuss new learning WB p. 389
- Apply It - WB p.390
- Close: What ideas about tens and ones could you teach someone else?
- Independent Practice - WB p. 391-392

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson 16: Numbers to 120</u>

Session 1 Explore: Reading and Writing Numbers From 100 to 120

- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:

- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:

- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students with 504 plans:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant

- Start - Number Sense: How Many?
- Discover It -how do you write and say numbers after 100
- Investigate It - write numbers to 120 using number chart WB p. 395
- Build Concepts - construct meaning for the number 100 WB p.396
- Close: What is something you discovered about numbers to 120?

Session 2 Develop: Finding 10 More and 10 Less Than a Number

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: finding 10 more on a 100 chart WB p.397
- Model It -relate counting on 10 to adding 10 pattern on 100 chart WB p.398
- Connect It - connect the number chart model to students' models
- Apply It - Flip and Cover WB p.399-400
- Close: use 100 Chart to find 10 more than given number
- Independent Practice - WB p. 401-402

Session 3 Develop: Using Cubes or Number Chart to Find 10 More or 10 Less

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: finding 10 more or 10 less than a number WB p.403
- Model It - show 10 more using 100 chart and cubes WB p. 404
- Connect It - connect cubes model to students' models
- Apply It - More or Less WB p. 405-406
- Close: use cubes or 100 chart to find 10 less than a number
- Independent Practice - WB p.407-408

Session 4 Refine: Finding 10 More or 10 Less

- Start - Number Sense: Which One Doesn't Belong
- Make a Connection - finding 10 more or 10 less than a number WB p.409
- Apply It - WB p. 410
- Close: How can you find 10 more or 10 less than a number using a 100 chart? How can you find 10 more or 10 less without using a 100 chart?
- Independent Practice - WB p. 411-412

- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of school failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

Session 5 Refine: Counting to 120

- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p.413
- Apply It -Wb p. 414
- Close: What ideas about the numbers 0 to 120 can you teach someone else?
- Independent Practice - WB p.415-416

Lesson Quiz - Teacher Toolbox

Comprehension Check

<u>Lesson : Compare Numbers</u>

Session 1 Explore: Use Base-Ten Blocks to Show Tens and Ones

- Start - Number Sense: How Many?
- Discover It - How are 10-trains and ten rods alike? Different?
- Investigate It - How can you use base-ten blocks to model quantities? WB p.419
- Build Concepts - construct meaning for concepts of *fewer* and *more* WB p.420
- Close: How can you use tens and ones to show and count quantities?

Session 2 Develop: Understanding of Tens and Ones

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: use base-ten blocks to compare numbers WB p. 421
- Model It - use base ten blocks to model more ways to make a given number WB p. 422
- Discuss It - talk about similarities/differences in the various models students made
- Connect It - compare and connect different ways to show two-digit numbers using tens/ones
- Apply It - Greater Number Cover Up - use symbols to show how numbers compare WB p. 423-424
- Close: use symbols <, >, = to compare numbers
- Independent Practice - WB p. 425-426

Session 3 Develop: Understanding of Tens and Ones

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect:compare numbers with the same number of tens WB p. 427
- Model It - introduce place-value chart to compare digits WB p. 428
- Connect It - explain different ways to compare two-digit numbers

• Apply It - Flip and Compare WB p.429-430 • Close - compare numbers using correct symbol • Independent Practice - WB p. 431-432 **Session 4 Refine:Ideas About Tens and Ones** • Start - Number Sense: Which One Doesn't Belong • Make Connections - find a number that is greater than or less than a given number WB p. 433 • Apply It - WB p. 434 • Close: Describe how to use tens and ones to compare numbers • Independent Practice - WB p. 435-436 **Session 5 Refine: Comparing Numbers** • Start - write numbers described by place value descriptions • Analyze It - recall/discuss new learning WB p.437 • Apply it - WB p.438 • Close: What do you know about comparing two digit numbers that you could teach someone else? • Independent Practice - WB p. 439-440 **Lesson Quiz** (Teacher Toolbox) **Comprehension Check** **Math in Action** - Plan a Pollinator Garden WB p. 441-444 **Self-Reflection -** WB p. 445 **Unit Review** WB p. 446-448 **Unit Assessment** (Teacher Toolbox)	

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 2 Curriculum Associates.

Teacher Toolbox

- Digital Mathtools
- i-Ready Lessons
- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center
- Multilingual Glossary

Student Materials:

Tens and ones manipulatives
100 charts
10-sided die

i-Ready: My Path individualized practice program

Games: *Race to 100* TG p.686
Compare to 50 Bingo TG p.562

Course: Mathematics Grade 1

Unit #5: Operations with Tens and Ones

Grade Level(s): First Grade	**Length of Unit:23 days**

Unit Rationale:
Students will be introduced to the operations of addition and subtraction with two-digit numbers.

Stage 1 - Desired Results

Enduring Understandings:	**Essential Questions:**
Students will understand that… ● You can use what you know about tens and ones to add or subtract tens from any number ● When adding two-digit numbers, you can add tens to tens, and ones to ones	● What are different methods of adding two-digit numbers? ● Does your number sentence and answer make sense? ● How can you use a place value chart to check your answer? ● Why do you need to add tens to tens and ones to ones in a two-digit number?

● Sometimes you need to break apart and put together numbers in ways that are helpful to you.	● What does it mean to regroup? ● When do you need to regroup?
Content: *Students will know…* ● Count tens as 1 ten, 2 tens, 3 tens … or as 10, 20, 30. ● Use counting on, counting back, and strategies based on place value and properties to add and subtract multiples of 10. ● Relate adding tens to adding ones. ● Mentally add 10 to any number and subtract 10 from any number within 100. ● Recognize that adding or subtracting a ten results in a change in the tens digit, but the ones digit remains the same. ● Add multiples of 10 to any two-digit number within 100. ● Apply a strategy based on place value to add a two-digit number and a multiple of 10 and relate it to a written method. ● Model adding a two-digit number and a multiple of 10 using place value understanding. ● Add two-digit and one-digit numbers with and without regrouping. ● Compose a ten when adding ones that total 10 or more. ● Add 2 two-digit numbers with and without regrouping. ● Compose a new ten when adding ones that total 10 or greater. ● Develop strategies based on place value for adding two-digit numbers.	**Skills:** *Students will be able to…* ● Use base-ten blocks and quick drawings to model and represent tens in word problems. ● Complete equations based on models to solve word problems involving adding and subtracting tens. ● Restate what information a word problem is asking for and orally describe how to solve. ● Explain the relationship between adding and subtracting single digits and adding and subtracting multiples of ten. ● Use connecting cubes, base-ten blocks, or a hundreds chart to show how only the tens digit changes when 10 is added to or subtracted from a number. ● Tell how finding 10 more or 10 less is similar to and different from finding 1 more or 1 less. ● Write numbers that are 10 more or 10 less than a given number. ● Use quick drawings, number bonds, and equations to show how to add tens with tens and then add ones to solve word problems using addition. ● Describe reasoning behind choosing a particular strategy to solve word problems using addition . ● Analyze different approaches to adding tens to a two-digit number and tell how they are alike and how they are different. ● Make quick drawings of base-ten block models to show how to add two-digit and one-digit numbers with regrouping. ● Explain why sometimes a tens digit changes in the total when a number of ones are added. ● Rewrite two-digit numbers as tens and ones to add numbers with and without regrouping. ● Rewrite two-digit numbers using place value notation and as tens and ones to add with and without regrouping.

NJ Student Learning Standards - Mathematics
Content Standards: 2023 NJSLS-Mathematics (K-12)

1.OA.B.3 Apply properties of operations as strategies to add and subtract.2 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.NBT.B.2a. 10 can be thought of as a bundle of ten ones — called a "ten."

1.NBT.B.2c. 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.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.

The Standards for Mathematical Practice:

Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.
Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning.

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:

1. Utilize critical thinking to make sense of problems and persevere in solving them

Connected Careers:
Engineer

Explanation of how 9.2 standards connect to the unit:

Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. In this unit,
Addition and subtraction operations are connected to careers in accounting and finance.

Explanation of how CLKSs connect to the unit:

1. Using critical thinking is essential in solving math word problems because it helps students move beyond mere calculation to understanding the problem's context, identifying relevant information, and applying appropriate strategies.

Explanation of how Connected Careers connect to the unit:

Solving math word problems is a critical skill for careers that require analytical thinking, problem-solving, and the application of mathematical concepts to real-world situations. Engineers frequently encounter word problems that require them to apply mathematical concepts to design, analyze, and troubleshoot systems and structures.

Interdisciplinary Standards

RI.CR.1.1./Informational Reading Ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).

2.2.2.MSC.6/Comprehensive Health and Physical Education: Execute appropriate behaviors and etiquette while participating in and viewing activities, games, sports, and other events to contribute to a safe environment.

Explanation of how interdisciplinary standards connect to the unit:

RI.CR.1.1./Informational Reading: In the Literacy Connection activity, students listen to and discuss the story of *Owney, the Dog Who Rode the Trains.* Then, students will use their understanding of solving addition and subtraction word problems to complete the literacy connections math problems.

2.2.2.MSC.6/Comprehensive Health and Physical Education: Students will demonstrate good sportsmanship while playing unit math games, such as Race to 100.

Technology Integration / 9.4 Standards:

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)
8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

Explanation of how 9.4 standards connect to the unit:

9.4.2.CT.3:Inductive and deductive reasoning are both essential tools for solving word problems, as they allow for different approaches to thinking and problem-solving.Inductive reasoning involves making generalizations based on specific examples or patterns such as may be found in a sequence of numbers. Deductive reasoning, on the other hand, involves applying general principles or rules to specific cases to reach a conclusion, such as using known math formulas to solve a problem.

8.1.2.CS.1: Students will use computing devices to perform a variety of tasks accurately and quickly (iReady, online games)

Stage 2- Assessment Evidence:	
Assessment:	
Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments
Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

<u>Lesson 18 Add and Subtract Tens</u>

Session 1 Explore:

- Start - Number Sense: How Many?
- Discover It- adding numbers with totals beyond 20
- Investigate It -Thinking about tens can help when adding tens numbers WB p. 453
- Build Concepts - relate ideas about 10 more ad 10 less WB p.454
- Close: How is counting on by tens the same as counting on by ones? How is it different?

Session 2 Develop: Adding and Subtracting a Multiple of 10 From a Multiple of 10

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: using the numbers of tens to

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Tools
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant

subtract WB p.455
- Model It - connect 100 chart to strategy WB p.456
- Connect It - connect the number chart model to students' models
- Apply It - Great Race to 100 WB p.457-458
- Close: subtract groups of ten from more tens to solve equation
- Independent Practice - WB p. 459-560

Session 3 Develop: Adding a Multiple of Ten to a Two-Digit Number
- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: add tens to any number WB p.461
- Model It -use 100 chart to show adding tens WB p. 462
- Connect It - connect number chart model to students' models
- Apply It - Add Up the Ladder WB p. 463-464
- Close: use groups of ten to add and solve the equation
- Independent Practice - WB p.465-466

Session 4 Refine:Adding and Subtracting Tens From a Two-Digit Number
- Start - Number Sense: Which One Doesn't Belong
- Make a Connection - apply and explain strategies for adding and subtracting tens from two-digit numbers WB p.467
- Apply It - WB p. 468
- Close: What do you understand about adding and subtracting tens that you could teach someone else?
- Independent Practice - WB p. 469-470

Session 5 Refine: use Place Value to Add and Subtract Tens
- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p.471
- Apply It -Wb p. 472
- Close: How are adding and subtracting tens the same? Different?
- Independent Practice - WB p.473-474

Lesson Quiz (Teacher Toolbox)

Comprehension Check

- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:
- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:
- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students with 504 plans:
- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant

Lesson 19 Addition with Two -Digit Numbers

Session 1 Explore: Different Ways to See tens and Ones

- Start - Number Sense: How Many?
- Discover It - find the mystery number on a 100 chart
- Investigate It - using tens and ones to show and name a number WB p. 477
- Build Concepts - construct meaning for the concept *total* WB p. 478

Session 2 Develop: Adding One-Digit Numbers to Two-Digit Number

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: add a one-digit number to a two-digit number WB p.479
- Model It - use 100 chart and base-ten blocks WB p.480
- Connect It - connect the number chart model to students' models
- Apply It - Find the Helper Facts: familiar addition facts can help add two-digit numbers WB p481-482
- Close: using 100 chart and base-ten blocks, add a one-digit number to a two-digit number
- Independent Practice - WB p. 483-484

Session 3 Develop: Adding Two-Digit Numbers

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use what you know to add two-digit numbers WB p.485
- Model It -use base-ten blocks to represent each addend WB p. 486
- Connect It - connect base-ten model to students' models
- Apply It - Choose and Add: What tools will you use?WB p. 487-488
- Close: use base-ten blocks and 100 chart to add two-digit number to a two-digit number
- Independent Practice - WB p.489-490

Session 4 Refine:Adding Two-Digit Numbers

- Start - Number Sense: Which One Doesn't Belong
- Make a Connection - Can different tools help you model adding two-digit numbers? WB p.491
- Apply It - WB p. 492
- Close What ideas about adding a one-digit number to a two-digit number could you teach someone else?:
- Independent Practice - WB p. 493-494

- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of school failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

Session 5 Refine: Counting to 120

- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p.495
- Apply It -Wb p. 496
- Close: What did you learn about adding with two-digit numbers?
- Independent Practice - WB p.497-498

Lesson Quiz (Teacher Toolbox)

Comprehension Check

<u>Lesson 20 Add Two-Digit and One-Digit Numbers</u>

Session 1 Explore: Grouping 10 Ones as a Ten

- Start - Number Sense: How Many?
- Discover I - How do numbers change as you count?
- Investigate It - when ones become a ten WB p. 501
- Build Concepts - construct meaning for a base-ten tens rode WB p.502
- Close: What is something new you discovered today?

Session 2 Develop:Composing a New Ten When Adding with Tens and Ones

- Start - Number Sense: Quick Images
- Try-Discuss-Connect: show how to add one-digit and two-digit numbers WB p.503
- Model It - use ten-frame to break apart addend WB p.504
- Connect It - connect ten-frame model to students' models
- Apply It - 10 Frame Fill-Up WB p.505-506
- Close: use ten-frame to model and solve addition equation
- Independent Practice - WB p. 507-508

Session 3 Develop:Tens and Ones Can Be Used to Add

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: use tens and ones to help you add two-digit numbers WB p.509
- Model It - show how base-ten blocks, 100 chart relate to equation WB p. 510
- Connect It - connect Model It model to students' models
- Apply It - Down and Over WB p. 511-512
- Close: use tens and ones to add a two-digit

number and a one-digit number
- Independent Practice - WB p.513-514

Session 4 Refine: Finding 10 More or 10 Less
- Start - Number Sense: Which One Doesn't Belong
- Make a Connection -apply and explain different strategies for adding two-digit and one-digit numbers WB p.515
- Apply It - WB p. 516
- Close: Which addition strategy did you like better: Breaking apart the one-digit number to get to the next ten or breaking apart the two-digit number to add the ones to a tens number> Why?
- Independent Practice - WB p. 517-518

Session 5 Refine: Counting to 120
- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p519
- Apply It -Wb p.520
- Close: What did you learn about adding two-digit and one-digit numbers that you could teach someone else?
- Independent Practice - WB p.521-522

Lesson Quiz (Teacher Toolbox)

Comprehension Check

<u>Lesson 21 Add Two Digit Numbers</u>
Session 1 Explore:
- Start - Number Sense: How Many?
- Discover It - group and trade blocks to show tens and ones
- Investigate It - break apart a number in different ways WB p. 525
- Build Concepts - construct meaning for the number 76 WB p.526
- Close: How do the ones units and ten rods help you model a number in different ways?

Session 2 Develop: 100 Chart Can Be Used to Add Two-Digit Numbers
- Start - Number Sense: Quick Images
- Try-Discuss-Connect: add two-digit numbers WB p.527
- Model It - use the 100 chart to add WB p.528
- Connect It - connect the number chart model to students' models

- Apply It - Roll, Model, and Add WB p.529-530
- Close: use 100 chart to add tens and ones to a two-digit number and solve equation
- Independent Practice - WB p. 531-532

Session 3 Develop: UsingBase-Ten Blocks to Add

- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect: How else can you think about tens and ones to add two-digit numbers? WB p.533
- Model It - use base-ten blocks to add WB p.534
- Connect It - connect base-ten block model to student models
- Apply It - What Could Our Total Be? WB p. 535-536
- Close: use base-ten blocks to add two-digit numbers and solve equation
- Independent Practice - WB p.537-538

Session 4 Refine: Adding Two-Digit Numbers

- Start - Number Sense: Which One Doesn't Belong
- Make a Connection - apply and explain strategy for adding two-digit numbers WB p.539
- Apply It - WB p. 540
- Close: How can you use tools to help you add two-digit numbers? What tools would you use?
- Independent Practice - WB p. 541-542

Session 5 Refine: Counting to 120

- Start - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB p.543
- Apply It -Wb p. 544
- Close: What ideas about addition two-digit numbers could you teach someone else?
- Independent Practice - WB p.545-546

Lesson Quiz (Teacher Toolbox)
Comprehension Check
Math in Action - Donate Pet Toys WB p.547-550
Self-Reflection - WB p. 551
Unit Review WB p. 552-554
Unit Assessment (Teacher Toolbox)

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 2 Curriculum Associates.

Teacher Toolbox

- Digital Mathtools
- i-Ready Lessons
- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center
- Multilingual Glossary

Motivational Books;
One Hundred Ways to Get to 100 by Jerry Pallotta

Student Materials:

Tens and Ones manipulatives
100 charts
10 sided die

i-Ready: My Path individualized practice program

Course: Mathematics Grade 1

Unit #6: Geometry and Measurement

Grade Level(s): First Grade	**Length of Unit: 32 days (including Money-Lesson 27)**

Unit Rationale:

Students will extend their knowledge of geometric shapes by analyzing, composing, and partitioning shapes.
Students will also explore telling time to the hour and half hour; identify coins and their value, and find the total value of groups of pennies, nickels, dimes and/or quarters. Students will extend their understanding of length by ordering objects by length and by measuring and comparing lengths of objects.

Stage 1 - Desired Results

Enduring Understandings:	**Essential Questions:**

Students will understand that… ● You can describe and sort shapes by counting the number of sides and corners ● You can put 2 or more shapes together to make a new shape ● You can divide shapes into 2 equal parts (called halves) or 4 equal parts (called fourths) ● An analog and a digital clock measure time ● Time can be measured in hours and half-hours ● You can compare the length of objects and put them in length order by lining them up at one end ● You can tell which of two objects is longer by comparing both of them to another object ● Money can be measured using coins ● Coins look different and have different values.	● What are some ways you can sort shapes? ● What shapes make up the faces of solid shapes? ● How can you break shapes into equal parts? ● Why is it important to measure time? ● Can you use math vocabulary to compare the relationship between the length of 2 or more objects? ● What are different ways you can put objects in order by length? ● Why is it important to use same-sized units when measuring length? ● Why are there different ways to make a given amount of money?
Content: *Students will know…* ● Draw lines to partition circles, squares, and rectangles into 2 and 4 equal parts. ● Put shapes together to form new shapes. ● Relate 3 dimensional figures to everyday objects. ● Use 2 or more shapes to make a new composite shape. . ● Fold or draw lines on paper shapes to show either 2 or 4 equal parts. ● Describe the equal parts as halves, fourths and quarters, and use the phrases *half of, fourth of*, and *quarter of*. ● Draw the hour and minute hands on an analog clock to show a given time to the hour and to the half hour. ● Read the time to the hour and to the half hour, using analog and digital clocks. ● Write the digits on a digital clock to show a given time to the hour and half-hour. ● Order three classroom objects by length. ● Compare lengths of three objects. ● Explain why one end of all the objects being compared must be aligned. ● Compare two objects by comparing their lengths to a third object. ● Count and write the number of units used to measure the length of an object with nonstandard units. ● Iterate units with no gaps or overlaps. ● Name coins (penny, nickel, dime, quarter) and tell the value of each.	**Skills:** *Students will be able to…* ● Distinguish between defining and non-defining attributes. ● Analyze, describe, and name a shape based on its attributes ● Build and draw new shapes with a given set of defining attributes. ● Describe a whole shape as a number of equal parts. ● Recognize when a folded or partitioned shape is not divided into equal parts and tell why. ● Understand the relationship between the number and size of equal parts of the same shape. ● Directly compare the lengths of three objects.and order the objects by length ● Describe length of three objects as they relate to each other. ● Indirectly compare lengths of two objects by using a third reference object. ● Use reasoning to indirectly compare the lengths of objects and recognize that indirect comparison can be helpful when it is not possible to compare objects directly. ● Measure the length of an object using a whole number of non-standard units of measure. ● Understand that the number of iterated units from end to end is a measure of length. ● Relate the value of coins to the value of one dollar. ● Count on to find the value of a collection of coins.

● Find the value of a set of dimes and pennies by counting on by tens and ones. ● Find the value of a set of mixed coins. ● Identify how many pennies, dimes, and quarters make the value of one dollar.	

NJ Student Learning Standards - Mathematics
Content Standards: 2023 NJSLS-Mathematics (K-12)

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

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

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.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. For example, show 25¢ as two dimes and one nickel, and as five nickels. Show $20 as two tens and as 20 ones.

The Standards for Mathematical Practice:
Practice 1: Make sense of problems and persevere in solving them.
Practice 2: Reason abstractly and quantitatively.
Practice 3: Construct viable arguments and critique the reasoning of others.
Practice 4: Model with mathematics.
Practice 5: Use appropriate tools strategically.
Practice 6: Attend to precision.
Practice 7: Look for and make use of structure.
Practice 8: Look for and express regularity in repeated reasoning

Career Education (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Standards)

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

CLKS Practices:

1. Attend to financial well-being
2. Plan education and career paths aligned to personal goals

Connected Careers:
designer

Explanation of how 9.2 standards connect to the unit:

Math is a fundamental tool that is integrated into almost every profession. It helps professionals analyze data, solve problems, make decisions, and optimize processes, making it an essential skill across a wide variety of careers. Throughout the unit, teachers connect what is being learned to a practical application in real life, as well as noting the kinds of jobs that incorporate the particular math concepts being covered. In this unit, concepts of shapes, time, money, measurement are tied to careers in engineering, research, sales, and construction.

Explanation of how CLKSs connect to the unit:

1. Young students can begin attending to financial well-being during math instruction on money by understanding the value of different coins and bills, and how to add them together to make purchases. Through the class token-economy behavior plan, students earn money for positive behaviors, which can then be used to purchase classroom items and privileges. Students are introduced to simple budgeting exercises and must make decisions about how to spend their savings.
2. The study of geometry, time, money and measurement are always enjoyed by young children, as they are particularly relevant to everyday life and may open the door to possible future careers.

Explanation of how Connected Careers connect to the unit:

Geometry is crucial for designers because it provides the foundational principles for creating visually appealing and functional designs. Understanding geometric shapes and forms allows designers to create distinctive graphical elements that are both memorable and meaningful.

Interdisciplinary Standards

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.

9.1.2. FI.1/Financial Literacy: Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).

1.5.2.Cr1a/Visual Arts: Engage in individual and collaborative exploration of materials and ideas through multiple approaches, from imaginative play to brainstorming, to solve art and design problems.

Explanation of how interdisciplinary standards connect to the unit:
SL.PE.1.1. Students will participate in collaborative conversations about geometry and measurement with peers and teachers in small and larger groups.

9.1.2. FI.1/Financial Literacy: During an introductory lesson on money, students brainstorm and list ways to pay for things that they and their families might need. Included in this discussion is a simple explanation of the various forms of money, as well as the advantages and drawbacks of using them.

1.5.2.Cr1a/Visual Arts: Students experiment with pattern blocks and 3-D shapes to create pictures and sculptures as they explore their different attributes.

Technology Integration (9.4 Standards):

9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource.

Explanation of how 9.4 standards connect to the unit:

9.4.2.IML.1: As a geometry extension activity, the teacher will use the Smartboard to guide students in a digitally search for images of shapes in architecture. Students can identify the shapes used and use these images as inspiration for their own creations.

Stage 2- Assessment Evidence:

Assessment:

Formative	Lesson quizzes Unit Reviews Cumulative Practice Tests Comprehension Checks Independent practice activities Fluency assessment
Summative	Comprehension Checks Adaptive Diagnostic Assessment Fluency assessment
Alternative	Small group assessment Conferring sessions
Benchmark	Mid and Unit Assessments
Other (optional)	Self Reflection

Stage 3 - Learning Plan

Learning Activities:

Lesson 22 - Shapes

Session 1 Explore: two dimensional shapes

- Start -Number Sense: How Many?
- Discover it- describe flat shapes
- Investigate it - describe defining and non-defining attributes of flat shapes WB 559
- Build Concepts: construct meaning for concept of corners WB 560
- Close - Which clues, or attributes are most helpful when describing a shape?

Session 2 Develop: combining flat shapes to make composite shapes

- Start - Number Sense: Quick Images
- Try -Discuss-Connect - using pattern blocks to make a character WB 561
- Model It- discuss shapes used WB 562
- Connect It - compare ways shapes were used
- Apply It - compose a new shape from smaller shapes WB 563-564
- Independent Practice WB 565-566

Session 3 Develop:3-combining solid shapes to make composite shapes

- Start - Number Sense: Show It Another Way
- Try -Discuss-Connect - find solid shapes in larger solid shapes WB 567
- Model It - identify 3-D shapes by name WB 568
- Connect It - describe attributes and name rectangular prism, cone, cube, cylinder, and sphere
- Apply It - is solid shapes to build a larger solid shape WB 569- 570
- Independent Practice WB 571-572
- Close: identify solid shape within larger shape

Session 4 Refine:making composite shapes

- Start - Number Sense: Which One Doesn't Belong
- Make Connections: identify and describe attributes of shapes WB 573
- Apply It: WB 574
- Close: Review-What does it mean to compose a shape from smaller shapes?
- Independent Practice WB 575-576

Differentiation:

English Language Learners:

- Student Handbook Mathematical Language Reference Tools
- Provide option to use Spanish versions of online resources
- Co-constructed word banks
- Lessons taught through group work
- Small Group review, as needed
- During partner activities, pair with strong peer model
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

The ELL Math Resources Folder is located **here**

Gifted and Talented:

- Extend/Enrichment Activities
- Game Centers
- Personalize/i-Ready Lessons
- Lessons that focus on investigation or labs
- Real world applications through lessons, projects, and research
- Diversified difficulty in level of problems
- Project/extended assignment options
- Board Math: student presentations at boards

Special Education Students:

- Lessons taught through group work
- Use of hands-on manipulatives
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Real world applications to make learning relevant
- Multiple approaches to problem solving

Session 5 Refine: understanding composite shapes

- Start -Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB 577
- Apply It: WB 578
- Independent Practice: WB 579-580
- Close: What ideas about flat/solid shapes could you teach someone else?

Lesson 23 - Breaking Shape into Equal Parts

Session 1 Explore:putting shapes together in different ways

- Start - Number Sense: How Many?
- Discover It- use paper folding to explore how shapes can be partitioned into smaller units
- Investigate It - sort shapes into equal parts and unequal parts WB p.583
- Build Concepts: construct meaning for *part* and *whole* WB 584
- Close: What did you discover when you folded paper shapes?

Session 2 Develop:partitioning shapes into 2 or 4 equal parts

- Start - Number Sense: Quick Images
- Try Discuss Connect - divide shapes into 2 or 4 equal parts WB 585
- Model It - connect shapes to student models WB 586
- Apply It - practice dividing shapes equally in different ways WB 587-588
- Close It: Which one shows fourths?
- Independent Practice - WB 589-590

Session 3 Develop:relationship between equal parts and whole shape

- Start - Number Sense:-Show It Another Way
- Try-Discuss-Connect - size of part is related to number of equal parts WB 591
- Model It -comparing size of equal parts
- Connect It - compare/discuss new shapes WB 592
- Apply It - show equal parts WB 593-594
- Close It: Which is smaller, fourths or halves?
- Independent Practice - WB 595-596

Session 4 Refine:partitioning shapes into equal parts

- Start - Number Sense: Which Doesn't Belong?
- Make Connections - practice breaking shapes into equal parts WB 597-597-598

- Workstations for struggling students

Students with 504 plans:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
- Reteach/Tools for Instruction
- Reinforce/Math Center Activities
- Personalize/i-Ready Lessons
- Small Group review, as needed
- Game Centers
- Lessons taught through group work,
- Real world applications to make learning relevant
- Multiple approaches to problem solving
- Workstations for struggling students

Students at Risk of school failure:

- Lessons taught through group work
- Use of hands-on manipulatives
- Prepare/Ready Prerequisite Lessons
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- Game Centers
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- Workstations for struggling students
- Board Math: student presentations at boards

Links to Math Differentiation Chart and Accommodations Chart

- Independent Practice - WB 599-600
- Close:What ideas about dividing shapes into equal parts could you teach someone else?

Session 5 Refine:partitioning shapes

- Start - - Number Sense: Data Talk
- Analyze It - Recall/discuss new learning WB 601-602
- Independent Practice - WB 603-604
- Close: What have you learned about dividing shapes into equal parts?

Lesson Quiz (Teacher Toolbox)

Comprehension Check

Lesson 24: Tell Time

Session 1 Explore: Telling Time

- Start - Number Sense: How Many?
- Discover It - explore tools to tell time (digital/analog)
- Investigate It - numbers on a clock WB 607
- Build Concepts: construct meaning for concept *time of day* WB 608
- Close: How have you used clocks?

Session 2 Develop: Tell Time

- Start - Number Sense: Quick Images
- Try-Discuss-Connect showing whole hours WB 609
- Model It -notice differences in minute and hour hands WB 610
- Apply It - Match O'Clock: read time to hour on analog and digital clocks WB 611-612
- Close: What time is it? (Analog)
- Independent Practice - WB 613-614

Session 3 Develop: Tell Time

- Start-Number Sense: Show It Another Way
- Try-Discuss-Connect:- showing time to half hour WB 615
- Model It - compare different ways of representing a given half past time and identify how they are related WB 616
- Apply It - practice different ways to show times to the half hour on analog and digital clock WB 617-618
- Independent Practice - WB p. 619-620
- Close: At 7:30, where would the hour and minute

hands be?

Session 4 Refine: Tell Time

- Start- Number Sense: Which One Doesn't Belong?
- Make Connections - showing half hour on analog and digital WB 621
- Apply It - WB 622
- Independent Practice - WB p. 623-624
- Close: What have you learned about telling time that you could teach someone else?
-

Session 5 Refine: Telling Time

- Start -Number Sense: Data Talk
- Analyze It- Recall/discuss new learning WB 625
- Apply It - WB 626
- Independent Practice - WB 627-628
- Close: How can telling time help you at home?

Lesson Quiz (Teacher Toolbox)

Comprehension Check

Lesson 27 - Money

Session 1 Explore: attributes of coins

- Start -Number Sense: How Many?
- Discover It - explore, sort, describe coins by their attributes
- Investigate It- identify name and value of each coin WB 679
- Build Concepts - Construct meaning for word *money* WB 680
- Close:Name two coins. How are they the same? How are they different?

Session 2 Develop: Finding the Value of Coins

- Start - Number Sense: Quick Images
- Try Discuss-Connect: Find total value for set of dimes and pennies WB 681
- Model It - determine counting pattern for dimes and pennies WB p.682
- Connect It -connect using tens and ones to counting sets of dimes and pennies
- Apply It - Pick 8: use tens and ones to find value of a set of coins WB 683-684
- Independent Practice - WB 685-686
- Close: use play money to show 26 cents

Session 3 Develop: find total value for set of coins

- Start - Number Sense: Show It Another Way

- Try It - count sets of dimes and pennies to determine which set is more WB p. 687
- Discuss It - discuss strategies used with a partner
- Model It - use 100 chart to keep track of the value
- WB 688
- Connect It - compare 100 chart to student strategies
- Apply It - Mystery Bag: find value set of coins with quarters and nickels WB p. 689-690
- Additional Practice - WB 691-692
- Close: Find total value of coins shown

Session 4 Refine: Counting Money

- Start - Number Sense: WHich One Doesn't Belong?
- Make Connections - show the same value in different ways WB 693
- Apply It - WB 694
- Independent Practice - WB 695-696
- Close: What advice would you give to someone who wanted to find the value of a set of coins?

Session 5 Refine: count coin values

- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB 697-698
- Independent Practice - WB 699-700
- Close: How can you use counting money in the real world?

Lesson Quiz (Teacher Toolbox)

Comprehension Check

Math in Action: Craft a Kite WB 701-704

Unit Review WB 705-708

Unit Assessment (Teacher Toolbox)

<u>Lesson 25: Compare and Order Lengths</u>

Session 1 Explore:measurable attributes of objects: long, short and tall

- Start - Number Sense" How Many?
- Discover It -describe attributes of different objects and use comparison words to compare them
- Investigate It - investigate length vs height using long, tall, short to describe objects WB 631
- Build Concepts - Construct ideas for the concept

short WB 632
- Close - Discuss: What did you notice about *long, tall,* and *short* objects?

Session 2 Develop:compare three lengths or heights
- Start - Number Sense:Quick Images
- Try-Discuss-Connect: put three objects in order by lenght WB 633
- Discuss It - How do you know that one object is longer?
- Model It - lining objects to be measured up at one end WB 634
- Connect It - make sense of the picture by comparing it to their own model
- Apply It - Order Lengths: practice ordering objects by length and describing as longest/shortest WB 635
- Independent Practice WB 637-638
- Close: Identify which group is in order by length

Session 3 Develop: Ordering Objects by Length
- Start - Number Sense: Show It Another Way
- Try-Discuss-Connect - How can you compare objects without moving them? WB 639
- Model It - using a third object to compare WB. 640
- Connect It - how were student models similar/different to Model it example
- Apply It - No Moving!: Use string to indirectly compare the length of two objects WB 641
- Independent Practice WB 643-644
- Close: practice comparing ribbons' lengths to third object

Session 4 Refine: ordering objects by length
- Start -Number Sense" Which One Doesn't Belong?
- Make Connections - apply and explain strategies for ordering and comparing lengths WB. 645
- Apply It - WB 646
- Independent Practice WB 647-648
- Close: What strategies would you suggest to someone else if they are trying to decide which object is longest or shortest?

Session 5 Refine: Ordering Lengths by Indirectly Comparing Lengths
- Start - Number Sense: Data Talk
- Analyze It - recall/discuss new learning WB 649
- Apply It - WB 650
- Independent Practice - WB 651-652

- Close: What ideas about comparing two objects without moving them could you teach someone else?

Lesson Quiz (Teacher Toolbox)

Comprehension Check

Lesson 26: Measure Length

Session 1Explore: Comparing Lengths

- Start - Number Sense: How Many?
- Discover It - measurements need to be consistent and countable
- Investigate It -measure length using nonstandard units WB 655
- Build Concepts - Construct meaning for the concept *long* WB 656
- Close: What did you measure and how did you measure it?

Session 2 Develop:measuring length with nonstandard units

- Start-Number Sense: Quick Images
- Try-Discuss-Connect - What is the best way to place objects to measure? WB 657
- Model It - compare students' models to Model It and discuss differences WB 658
- Apply It - practice using objects to measure length WB 659-660
- Independent Practice - Wb 661-662
- Close - Use squares to measure the length of the line

Session 3 Develop: measuring length with different nonstandard units

- Start -Number Sense: Show It Another Way:
- Try -Discuss- Connect - find the length of ribbon using two different tools WB 663
- Model It - WB 664
- Connect It - compare strategies used
- Apply It - Measure Two Ways: predict and measure length using 2 different units WB 665-666
- Independent practice - WB. 667-668
- Close: use squares and toothpicks to measure length of line

Session 4 Refine: Comparing Lengths

- Start - Number Sense: Which One Doesn't Belong
- Make Connections-using different units to measure length WB 669-670

● Independent practice - WB 671-672 ● Close:What ideas about measuring length could you teach someone else? **Session 5 Refine: measuring by iterating nonstandard units** ● Start -Number Sense: Data Talk ● Analyze It -recall/discuss new learning WB 673-674 ● Independent Practice - WB 675-676 ● Close:What is something you learned about measuring length? Lesson Quiz (Teacher Toolbox) Comprehension Check	

Core and Supplementary Instructional Materials

Teacher Pedagogical Resources:

i-Ready Classroom Mathematics Teacher's Guide Volume 1 Curriculum Associates.

i-Ready Teacher Toolbox:

- Digital Mathtools
- i-Ready Lessons
- Interactive Learning Games
- Adaptive Diagnostic Assessments
- i-Ready Assessment Reports
- Family Resource Center
- Multilingual Glossary

Motivational Books:

Sir Cumference and all the King's Tens by Cindy Neuschwander
Math Fables by Greg Tang
Eating Fractions by Bruce McMillan
The Grouchy Ladybug by Eric Carle
The Coin Counting Book by Rozanne Lanczak Williams
Alexander Who Used To Be Rich Last Sunday by Judith Viorst
You Can't Buy a Dinosaur With a Dime by Harriet Ziefert
How Long or How Wide by Brian Cleary
Millions to Measure by David M. Schwartz
Inch by Inch by Leo Lionni
Patterns and Shapes By Jerry Pallotta

The Greedy Triangle by Marilyn Burns
Captain Invincible and the Space Shapes by Stuart Murphy

Student Materials:

Attribute shapes
Pattern blocks
Shape drawing templates
3-D shapes
Individual Judy clocks
Plastic coins
Rulers

i-Ready: My Path individualized practice program

Games: *Measure Up!* TG p.758
Make a Shape! TG p. 832
5 In a Row, Mailbox Game
Space Race Game (Solid shape recognition)

Notes:
Inclusion of Climate Change Opportunities

(See Unit 3: Solving Word Problems and Making Comparisons)