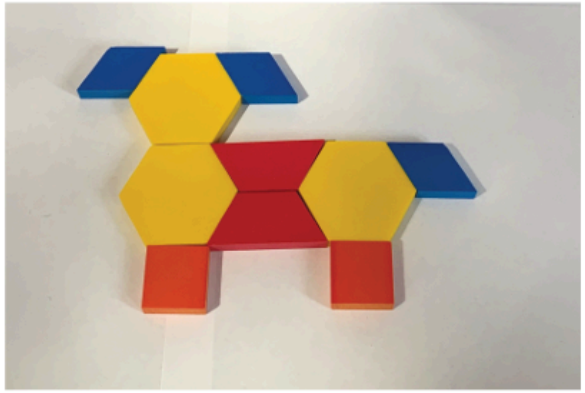
1st GRADE MATH CURRICULUM

Unit 7 Lesson 7: Put Together Flat Shapes

WU Notice and Wonder: Dogs (Warm up)

Student Task Statement

What do you notice?
What do you wonder?



Grade Level(s): 1st Grade

Curriculum Author(s): Taryn Fernandez, Jennifer Schnitzer, Alicia Schiavo
(Curriculum content aligns with the CT State Model Math Curriculum and is based on the Illustrative Math program used in grades K-9)

Course Description: The big ideas in grade 1 include: developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; developing understanding of whole-number relationships and place value, including grouping in tens and ones; developing understanding of linear measurement and measuring lengths as iterating length units; and reasoning about attributes of, and composing and decomposing geometric shapes.

Year At A Glance			
Unit Title	**Overarching Essential Question(s)**	**Overarching Enduring Understanding**	**Vision of A Learner "I Can" Statements**
Adding, Subtracting, and Working With Data	What does the data tell us?	We can interpret data to ask and answer questions	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Addition and Subtraction Story Problems	How can we solve story problems?	We can solve story problems by representing them with drawings, objects, words, and equations	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Adding and Subtracting Within 20	What is the relationship of addition and subtraction?	Addition and subtraction are related/inverse operations.	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Numbers to 99	What does each number in a two-digit number represent?	The two digits of a two-digit number represent amounts of tens and ones.	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Adding Within 100	How does understanding properties of operations help me with strategies when I calculate?	Commutative and Associative Properties demonstrate decomposing and representing numbers within equations.	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Length Measurements Within 120 Units	How do we compare the lengths of objects?	We can compare lengths of objects using other objects such as counting cubes	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Geometry and Time	How are shapes used in the real world? What is the result of dividing a shape into equal shares? How is time measured?	Shapes are all around our world and can be put together or taken apart to form other shapes. Decomposing into more equal shares creates smaller shares. Time is measured in hours and minutes and can be shown on different kinds of clocks.	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)
Putting it All Together	How can I show what I've learned?	Learning is best demonstrated by the ability to apply what we have learned to new situations.	TCC1(PK-2); TCC3(PK-2); CCE1(PK-2); CCE4(PK-2); TI1(PK-2); TI2(PK-2); TI4(PK-2); P2(PK-2); AA1(PK-2); A2(PK-2)

Unit 1 - Adding, Subtracting, and Working with Data

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 1.OA.C.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.C.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 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.MD.C.4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- 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).

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn’t work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
● We can choose categories for sorting that will help us create	● How do we represent and interpret categorical data?

data sets ● We can represent data with objects, symbols, tally marks, or numbers ● We can interpret data to ask and answer questions	● What does the data tell us?
Students will know... ● Color counters and ten-frames can help make addition and subtraction easier and provide visual references ● Which representation (tallies or numbers) is most helpful in answering certain types of questions	**Students will be able to...** ● add and subtract 1 or 2 to count on or count back ● organize and represent data ● sort objects into categories of their choice, describe their categories, and count the number of objects in each category ● collect data by conducting a survey ● interpret data represented in different ways and ask and answer questions about them ● analyze representations of data and respond to “how many in each category” and “how many in all” questions
Key Vocabulary: data, categories, represent, interpret, organize, sort, describe, counters, ten-frames	
Assessment Evidence	

Performance Tasks:
Students add or subtract 1 or 2 from a number within 10. They may use any method that makes sense to them including using objects, 10-frames, or fingers. Students may also count on or count back. Students find the value of sums and differences within 10 with no context. They may use any method that makes sense to them including using objects, 10-frames, or fingers. Students interpret a categorical table with tally marks. Students use an image of pattern blocks to complete a table to represent how the blocks could be sorted. The shapes are organized in groups and laid out in lines on the page to facilitate counting. Students also find the total number of pattern blocks. They can do this by counting the shapes or they can use the information from the table they created.
	Other Evidence:
	Various checkpoints throughout the unit for the following:
	● Build toward fluency by adding and subtracting within 10, in a way that makes sense to them.
	● Addition Methods
	  ● Recognize the number of dots without counting.
	  ● Count all to find the sum.
	  ● Count on to find the sum.
	  ● Use their knowledge of the count sequence to know certain sums.
	  ● Know certain sums.
	● Subtraction Methods
	  ● Represent all, then cross off or remove to find the difference.
	  ● Count back to find the difference.

	● Use their knowledge of the count sequence to know certain differences. ● Know certain differences. ● Organize and represent data. ● Sort objects into categories. ● Represent each object with a picture of the object, symbol, or number. ● Label the categories in their representation. ● Interpret data representations to ask and answer questions. ● Ask and answer “how many?” questions about each category of data. ● Ask and answer “how many?” questions about two categories of data combined. ● Ask and answer “how many?” questions about the total number in the data set.

Learning Plan

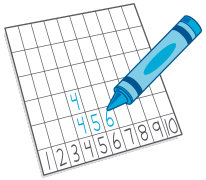
TCC1(PK-2): I can ask questions to solve a problem.
TCC3(PK-2): I can use what I’ve learned to come up with a solution.
CCE1(PK-2): I can share my ideas with help and show that I respect others.
CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
TI1(PK-2): I can use pictures or models to decide what to do next.
TI2(PK-2): I can explore and use tools that work best for me.
TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
P2(PK-2): I can use a strategy to keep trying even when something is hard.
AA1(PK-2): I can use a strategy, test it out and try something new if it doesn’t work.
AA2(PK-2): I can think about what worked for me or others and try it again.

- Students add and subtract within 10, and represent and interpret categorical data.

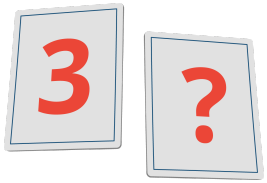
In this unit, students deepen their understanding of addition and subtraction within 10, and extend what they know about organizing objects into categories and representing the quantities.
In kindergarten, students solved addition and subtraction word problems within 10 using objects and drawings. They learned about Put-Together, Result-Unknown problems and worked toward fluency with sums and differences within 5.

The activities in this unit reinforce these understandings and initiate the year-long work of developing fluency with sums and differences within 10. Some problems involve finding sums greater than 10, a skill to be honed throughout the course and with the support of tools such as connecting cubes.
Students also build on the work in kindergarten as they engage with data. Previously, they sorted objects into given categories such as size or shape. Here, students use drawings, symbols, tally marks, and numbers to represent categorical data. They go further by choosing their own categories, interpreting representations with up to three categories, and asking and answering questions about the data.
This opening unit also offers teachers opportunities to introduce mathematical routines and structures for centers, and to develop a shared understanding of what it means to do math and to be a part of a mathematical community.

Number Race Five in a Row Find the Pair Check It Off









Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 2 - Addition and Subtraction Story Problems

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 1.MD.C.4: Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- 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.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.C.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 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.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.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.)
- 1.OA.D.8: Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ - 3, 6 + 6 = _.
- 1.OA.A.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.

- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
• The equal sign means "the same amount as" and "equals" • We can solve story problems by representing them with drawings, objects, words, and equations	• How can we solve story problems? • What does = mean?
Students will know...	**Students will be able to...**
• Images may be interpreted in different ways • Operations can be on either side of the equal sign • We can solve problems by counting on, counting back, or drawing a picture	• Solve Add To and Take From, Result Unknown and Add To, Change Unknown story problems • Retell a story • Represent a story with objects or drawings • Represent a story with equations • Explain how their representation matches the story • Represent an equation with a story

Key Vocabulary: equal sign, equation, analyze, solve, story problems, addition, subtraction, equals, the same amount as, result unknown, represent, cube towers, how many more, how many fewer, compare, sum, difference, put together, take apart, retell

Assessment Evidence

Performance Tasks:	**Other Evidence:**

Students use an image to explain how to find the difference between two quantities. They may interpret the image in different ways. Students solve a Put Together, Addend Unknown problem. Students solve a Compare, Difference Unknown story problem within 10. Students choose equations which match an Add To, Change Unknown story problem.Students identify which addition and subtraction equations are true. Students find the missing number to make addition equations true.	Various checkpoints throughout the unit for the following:
	• Solve Add To and Take From, Result Unknown and Add To, Change Unknown problems.
	  ○ Retell the story.
	  ○ Represent the story with objects or drawings.
	  ○ Represent the story with equations.
	  ○ Explain how their representation matches the story.
	  ○ Answer the question correctly.
	• Understand the meaning of the equal sign.
	  ○ Represent the story with equations.

	• Solve Put Together/Take Apart problems with unknowns in different positions.
	  ○ Retell the story.
	  ○ Represent the story with objects or drawings.
	  ○ Explain how their representation matches the story.
	  ○ Answer the question correctly.
	• Write equations to represent problems.
	  ○ Represent the story with equations.
	• Solve Compare, Difference Unknown problems.
	• Relate addition and subtraction.
	  ○ Retell the story.
	  ○ Represent the story with objects or drawings.
	  ○ Represent the story with equations.
	  ○ Explain how their representation matches the story.
	  ○ Answer the question correctly.
	• Solve different types of story problems, limited to those learned in this unit.
	• Apply understanding of the meaning of the equal sign to make sense of equations with a symbol for the unknown.
	  ○ Retell the story.
	  ○ Represent the story with objects or drawings.
	  ○ Represent the story with equations.
	  ○ Explain how their representation matches the story.
	  ○ Answer the question correctly.

Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I've learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students solve new types of story problems within 10 using the relationship between addition and subtraction. They develop an understanding of the meaning of the equal sign and connect story problems to equations.

In this unit, students learn to solve new types of addition and subtraction story problems and relate the quantities in the stories to equations. In kindergarten, students solved a limited number of types of story problems within 10 (Add To/Take From, Result Unknown, and Put Together/Take Apart, Total Unknown, and Both Addends Unknown). They represented their thinking using objects, fingers, mental images, and drawings. Students saw equations and may have used them to represent their thinking, but were not required to do so.

Here, students encounter most of the problem types introduced in grade 1: Add to/Take From, Change Unknown, Put Together/Take Apart, Unknowns in All Positions, and Compare, Difference Unknown. The numbers are kept within 10 so students can focus on interpreting each problem and the relationship between counting and addition and subtraction. This also allows students to continue developing fluency with addition and subtraction within 10.

As they solve problems, students analyze and write equations and consider the meaning of the equal sign. They may initially see it as a prompt for the answer to a question, which makes it difficult to interpret equations such as . Developing an understanding of the equal sign is particularly important in solving missing-addend problems. For example:

There are 9 counters total.
How many counters are under the cup?



Students may see a subtraction problem, represented by , or a missing-addend problem, represented by . This work also highlights that multiple equations can often be written for each story problem.

It is more important for students to explain the relationship between the equation they wrote and the story, than for their equations to match the story or their solution method.

To help students think about the meaning of each number in an equation, a box is placed around the answer to the question in the problem. In the last section, students work with equations where an empty box represents the unknown.
In the next unit, students will solve addition and subtraction problems within 20 and work with equations with a symbol for the unknown in all positions, and further develop their fluency within 10.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 3 - Adding and Subtracting within 20

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 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.)
- 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 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.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 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 = _.
- 1.NBT.A.1: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- 1.NBT.B.2.a: 10 can be thought of as a bundle of ten ones — called a "ten."
- 1.NBT.B.2.b: The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- 1.OA.A.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.

- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
• Addition and subtraction are related/inverse operations. • Various strategies can be used to quickly add numbers. • Fluency means being efficient, accurate, and flexible with computation strategies.	• What is the relationship of addition and subtraction? • Why are properties important in solving equations? • What does it mean to be fluent?
Students will know... • Different problem-solving strategies for composing and decomposing numbers to solve addition and subtraction problems for example: (make a 10, use doubles, or number lines). • Real-world mathematical situations can be represented using objects, drawings, and equations. • An unknown can be in any position of a mathematical situation. • Mathematical situations can include multiple addends. • The relationship between addition and subtraction allows solving for unknowns in any position. • The order of numbers in addition does not change the sum. • The numbers in an addition problem can be rearranged or regrouped without changing the sum. For example, 6 + 7 = 10 + 3 is a use of the associative property where the numbers are regrouped rather than being rearranged. • Addition occurs when counting forward. • Subtraction occurs when counting back. • The equal sign is used to represent quantities that have the same value. • To be a true equation, quantities on both sides of the equal sign must have the same value.	**Students will be able to...** • Explain how counting on and counting back relate to addition and subtraction. • Solve word problems involving situations of adding to and taking from using objects, drawings, and equations with a symbol for the unknown number within 10. • Solve word problems involving three addends whose sum is less than 10 using objects, drawings, and equations with a symbol for the unknown number. • Identify the unknown in a subtraction problem by showing the relationship between addition and subtraction. • Fluently add and subtract within 10. • Demonstrate and explain the meaning of equality with visual models and words. • Identify if equations are true or false. • Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. • Organize data with up to three categories in various ways. • Create a graph to represent a set of data. • Develop the conceptual understanding behind the use of the mathematical properties of addition (commutative and associative properties).

• The total can go on the right or left side of the equal sign.	• Develop the conceptual understanding that adding and subtracting with zero gives the same number (Additive Identity Property). • Explore how subtraction can be used to solve mathematical situations with unknown addends. • Use different strategies or properties of operations flexibly. • Explore the relationship between addition and subtraction to solve for unknowns in any position. • Explain the relationship between counting and adding or subtracting. • Demonstrate that problems can be solved in a variety of ways. • Describe why some strategies are more efficient than others. • Recognize and explain the meaning of the equal symbol. • Compare expressions without calculating.
Key Vocabulary: Adding to, Change, Comparing, Equal, Equivalent, Greater, Less, More, Putting together, Result, Start, Unknown, Word problems, Addition, Counting, Decomposing, Difference, Equal sign, Equation, Inverse operation, Minus sign, Number bonds, Plus sign, Remainder, Subtraction, Sum, Symbol, Taking apart, Taking from	
Assessment Evidence	

Performance Tasks:
Students select different representations of a number within 20, including double 10-frames, expressions, and connecting cubes. Students find the numbers that make addition and subtraction equations within 20 true. Students add 3 numbers within 20. Students find the value of expressions within 20 with no method suggested. Students use an addition fact in order to calculate a difference. Students solve a Start Unknown problem. Students find the value of sums and differences within 20.
	Other Evidence:
	Various checkpoints throughout the unit for the following:
	• Build toward fluency with adding and subtracting within 10.
	  ◦ Count on to find the sum.
	  ◦ Know certain sums.
	  ◦ Take away to find the difference.
	  ◦ Count up to find the difference.
	  ◦ Know certain differences.
	  ◦ Use the relationship between addition and subtraction to find the difference.
	  ◦ Use known sums to adjust expressions and find the sum or difference.
	• Understand 10 ones as a ten and the numbers 11 to 19 as a ten and some ones.
	  ◦ Identify teen numbers as a ten and some ones.

	• Find the value that makes an addition or subtraction equation true, involving 10.
	• Add and subtract one-digit numbers from teen numbers without composing or decomposing a ten.
	  ◦ Count all to find the value of the sum.
	  ◦ Count on to find the value of the sum or difference.
	  ◦ Take away to find the value of the difference.
	  ◦ Use the 10+n structure of teen numbers to add and subtract.
	• Add within 20, including 3 addends.
	  ◦ Count on to find the sum.
	  ◦ Make 10 to find the sum.
	  ◦ Use known sums to adjust addends to find the sum.
	  ◦ Apply the “add in any order” property to find the sum.
	  ◦ Know certain sums.
	• Subtract within 20.
	  ◦ Take away to find the difference.
	  ◦ Count on to find the difference.
	  ◦ Make 10 to find the difference.
	  ◦ Know certain differences.
	  ◦ Use addition facts to find the difference.

Learning Plan

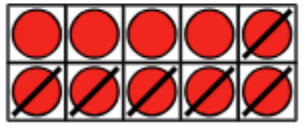
- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn’t work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students add and subtract within 20. Students apply the properties of operations and the relationship between addition and subtraction.

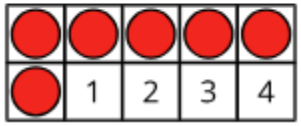
In this unit, students develop an understanding of 10 ones as a unit called “a ten” and use the structure of to add and subtract within 20.
In kindergarten, students composed and decomposed the numbers 11–19 into 10 ones and some more ones. In a previous unit, students solved story problems of all types with unknown values in all positions and numbers within 10. They used the relationship between addition and subtraction, drawings and equations, and various tools (10-frames, connecting cubes, two-color counters) to represent the quantities in the problems. They learned that the values represented by the numbers or expressions on each side of an equation are equal.
Here, students decompose and recompose addends to find the sum of two or three numbers. For example, to find the value of , they may decompose 6 into 1 and 5, compose the 1 and 9 into 10, and find .
Subtraction work occurs throughout the unit and becomes the focus in the last section. Students consider taking away and counting on as methods for subtracting. They understand subtraction as an unknown-addend problem and use their knowledge of addition to find the difference of two numbers.

For instance, students may reason about the value of $10 - 6$ by:

Taking away 6 from 10



Counting on to 10, starting from 6



Using an addition fact,

$6 + 4 = 10$

Students solve story problems throughout the unit and learn two new problem types—Add To, Start Unknown and Take From, Change Unknown. Students compare the structure of different types of story problems as they practice adding and subtracting within 20.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 4 - Numbers to 99

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 1.NBT.A.1: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- 1.NBT.B.2: Understand that the two digits of a two-digit number represent amounts of tens and ones.
- 1.NBT.B.2.c: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
- 1.NBT.C.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models 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.
- 1.OA.C.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.C.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 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 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 = _.
- 1.NBT.B.2.a: 10 can be thought of as a bundle of ten ones — called a "ten."
- 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.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.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.NBT.B.2.b: The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I've learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
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- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
• The two digits of a two-digit number represent amounts of tens and ones. • A two-digit number can be represented in different ways using tens and ones • The > symbol means "greater than" and the < symbol means "less than"	• What does each number in a two-digit number represent? • What symbols do we use to compare numbers to each other?
Students will know...	**Students will be able to...**
• There are different base-ten representations of two-digit numbers (drawings, words, and addition expressions) • "Greater than" and "less than" are used to compare numbers •	• Add and subtract multiples of 10. • Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, or words. • Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words. • Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. • Represent two-digit numbers in different ways, using different amounts of tens and ones.

Key Vocabulary: estimate, count, represent, place value, tens, ones, base-ten, multiples, greater than, less than, compare, identify, create, order, sequence, comparisons, collection, interpret, expressions

Assessment Evidence	

Performance Tasks:
Students write a number to represent the amount shown in different representations. Students find different ways to represent a two digit number. Students solve equations with the unknown in different locations where some tens are added to or subtracted from a two-digit number to give another two-digit number. Students compare two numbers within 100. They do this both by choosing which of two numbers is greater and using the symbols >, <, =. Students write the two numbers that come before a given number and the two numbers that come after the given number in the count sequence. Students relate the count sequence to the order of numbers.
	Other Evidence:
	Various checkpoints throughout the unit for the following:
	● Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, and words.
	  ● Organize and count objects by ten.
	  ● Represent a number in more than one way (cube towers, drawings, numbers, words, expressions).
	  ● Connect different place value representations.
	  ● Write multiples of 10 accurately.
	● Add and subtract multiples of 10.
	  ● Add and subtract multiples of 10 from other multiples of 10.
	● Understand that the two digits of a two-digit number represent amounts of tens and ones.
	● Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words.
	  ● Describe a two-digit number as made up of _____ tens _____ ones.
	  ● Represent a number in more than one way (drawings, numbers, words, expressions).
	  ● Recognize different base-ten representations of the same number.
	  ● Write two-digit numbers accurately.
	● Add and subtract multiples of 10.
	  ● Add and subtract 10 and multiples of 10.
	● Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols >,< , and =.
	  ● Connect different place value representations.
	  ● Determine which two-digit number is greater or less.
	  ● Use >,< , and = to write comparison statements.
	  ● Read comparison statements that use >,< , or = .
	● Represent two-digit numbers in different ways, using different amounts of tens and ones (for example 52=50+2=40+12).

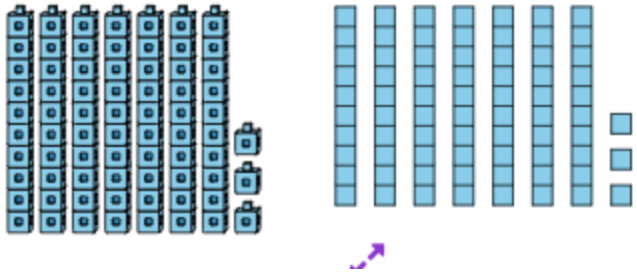
	● Represent a number with tens and ones in more than one way. ● Recognize when the same number is represented with different amounts of tens and ones. ● Compare two-digit numbers represented in different ways.

Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I've learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
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- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students develop an understanding of place value for numbers up to 99.

This unit develops students' understanding of the structure of numbers in base ten, allowing them to see that the two digits of a two-digit number represent how many tens and ones there are.
Previously, students counted forward by one and ten within 100 in the Choral Counting routine. They learned that 10 ones make a unit called a ten and that a teen number is a ten and some ones.
Here, as they count and group quantities, students generalize the structure of two-digit numbers in terms of the number of tens and ones. This understanding enables students to transition from counting by one to counting by ten and then counting on. For example, to count to 73, they may count 7 tens and count on—71, 72, 73.
Students interpret and use multiple representations of two-digit numbers: connecting cubes, base-ten diagrams, words, and expressions. Connecting cubes in towers of 10 and singles are used instead of base-ten blocks, which will be used in later grades, so units of ten can be physically composed and decomposed with the cubes. Here are some representations for 73:



7 tens and 3 ones

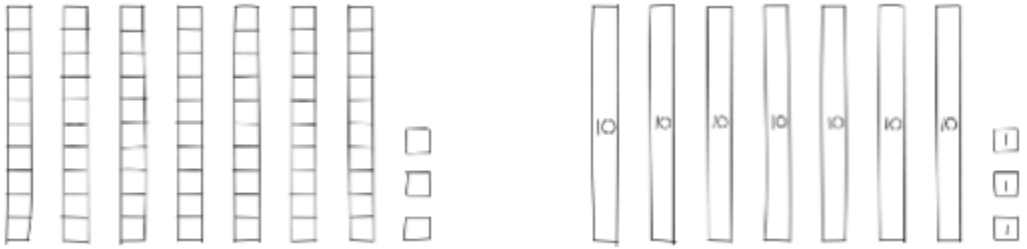
3 ones and 7 tens

$70 + 3$

$63 + 10$

$60 + 13$

Students also represent two-digit numbers with their own drawings. They may start by drawing towers of ten and show each unit of one within each ten, and later simplify their drawings to show rectangles for tens and small squares for ones. Encourage students to use the drawings that make sense to them, and for those who create the more abstract drawing, to express how many ones each ten represents.



To help students make sense of base-ten representations, give students access to connecting cubes—towers of 10 and singles —in all lessons. Some students may also benefit from access to double 10-frames and two-color counters, however all students should be encouraged to work toward using connecting cubes in towers of 10 and singles.

Later in the unit, students use the value of the digits to compare two-digit numbers and learn to use comparison symbols (<, >) to record their comparisons. The unit concludes with opportunities for students to explore different ways of using tens and ones to represent two-digit numbers.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 5 - Adding within 100

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 1.NBT.A.1: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- 1.NBT.B.2: 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.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 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.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.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 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 = _.
- 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.
- 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.
- 1.OA.C.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.D.7: 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).

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
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- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...

- Commutative and Associative Properties demonstrate decomposing and representing numbers within equations.
- We can decompose numbers so that the numbers can be recombined for a 10 or group of 10, and some more.

Essential Questions:

- How does understanding properties of operations help me with strategies when I calculate?

Students will know...

- Decompositions of number within 10.
- Strategies of near ten, doubles, doubles, +1, +2.
- Counting sequence to 120.
- Two digit numbers are composed of groups of tens and some ones.
- Counting is connected to adding and subtracting.
- Decade numbers are groups or units of tens.
- Flexible use of different strategies or properties of operations

Students will be able to...

- Use concrete models or drawings and strategies to add within 100 and record using vertical and horizontal symbolic models.
- When given a set of objects (ranging from 0-120), represent the quantity with a written numeral.
- Develop the conceptual understanding behind the use of the mathematical properties of addition (commutative and associative properties).
- Recognize and explain the meaning of the equal symbol.
- Determine if both sides of an equation are equal (true) or unequal (false).
- Explain why equations in formats other than a + b = c are true or false, e.g., a = a, c = a + b, a = a + 0, a + b = b + a.
- Use and verbalize the successive number names' pattern for counting by ones and decades (by tens) sequence.

	• Recognize and explain numerals have a repeating pattern between 20−99. • Represent two-digit numbers with proportional objects, e.g., cubes, beads, tenframes, sticks, etc. • Compose and decompose two-digit numbers into tens and ones with proportional objects. • Explain the reversal of digits, e.g., “How is 14 different than 41?” • Apply place value strategies for addition, and explain the reasoning used. • Compute using strategies and models: • Add a two-digit number and a one-digit number; • Add a two-digit number and a multiple of 10; and
Key Vocabulary: Decade, Equal, False, Group, Part, Relationship, True, Unit, Unknown, whole, Addend, Addition, Associative Property, Commutative Property, Compose, Digit, Multiple of 10, Numeral, One, Place Value, Properties of Operations, Sum, Ten	
Assessment Evidence	

Performance Tasks:
Students add different multiples of 10 to a given number. Students select expressions that are equivalent to a given expression. While they can find the value of each expression, the given expressions are chosen to represent a method that students have seen and used to add two-digit numbers. Students find sums of numbers using any method they choose. They may use drawings, words, or equations to show their thinking. The problems grow in complexity. Students analyze incorrect reasoning presented with equations.
	Other Evidence:
	Various checkpoints throughout the unit for the following:
	• Add within 100 without composing a ten.
	  ◦ Add within 100 by counting on by tens and ones.
	  ◦ Add within 100 by combining tens and tens and ones and ones.
	  ◦ Explain their addition method orally in a way others will understand.
	  ◦ Represent their addition method on paper in a way others will understand.
	• Use equations to represent addition methods.
	  ◦ Write equations to represent addition methods.
	• Add a one-digit and a two-digit number within 100 that require composing a ten.
	  ◦ Add within 100 by counting on.
	  ◦ Make a ten to add within 100.
	  ◦ Add within 100 by combining ones and ones.

	● Explain their addition method orally in a way others will understand. ● Represent their addition method on paper in a way others will understand. ● Use equations to represent addition methods. ● Write equations to represent addition methods. ● Add 2 two-digit numbers within 100, that require composing a ten. ● Add within 100 by counting on tens and ones. ● Add within 100 by combining tens and tens and ones and ones. ● Explain their addition method orally in a way others will understand. ● Represent their addition method on paper in a way others will understand. ● Use equations to represent addition methods. ● Write equations to represent addition methods.

Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
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- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students use place value understanding and properties of operations to add within 100.

In this unit, students add within 100, using place value and properties of operations in their reasoning.

Previously, students composed, decomposed, and compared numbers within 100. They reasoned about units of tens and ones and represented numbers with connecting cubes, base-ten drawings, expressions, and equations in different ways (for example, and). Here, they build on these understandings of place value to find sums.

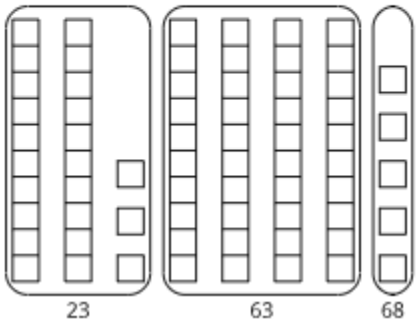
Students begin by adding a two-digit number with another two-digit number or with a one-digit number where it is not necessary to compose a new ten. Then, they observe cases in which adding some ones together require composing a new ten.

Two broad methods for finding sums are explored: adding on by place (adding on tens, then ones), and adding units by place (combining tens with tens and ones with ones).

Along the way, they also compare methods from earlier work, such as counting on and making use of known sums, including sums of 10.

$$23 + 45$$

Add on tens, then add on ones:



To make sense of methods for adding (especially as it relates to composing a ten when adding ones and ones), students work with a variety of representations—connecting cubes in towers of 10 and singles, base-ten drawings, expressions, and equations. They also use different representations to share their thinking with others.

Expressions and equations are presented horizontally here to encourage students to make sense of the numbers and ways of adding rather than apply an algorithm. Eventually, they write equations to represent their thinking. For example, to find the sum of 52+46, they might write:

$52 + 40 = 92$
$92 + 6 = 98$

or

$50 + 40 = 90$
$2 + 6 = 8$
$90 + 8 = 98$

Students are not expected to write or use equations in any specific way. Even in activities that focus on interpreting and writing equations, students should have continued access to drawings and other tools for sense making. Provide access to connecting cubes in towers of 10 and singles throughout the unit.
Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 6 - Length Measurements within 120 Units

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 1.MD.A.1: Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- 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.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 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.OA.C.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.C.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 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.MD.A.2: Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.
- 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.OA.A.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.A.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 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.

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.

- TCC3(PK-2): I can use what I've learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
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- TI1(PK-2): I can use pictures or models to decide what to do next.
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- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
• We can compare the lengths of objects using other objects such as counting cubes. • Compare stories, take from stories, and add to stories can all be created about measurement.	• How do we compare the lengths of objects? • What types of story problems can I create about measurement?
Students will know...	**Students will be able to...**
• "Shorter than" and "longer than" are used to compare lengths of objects • An object can be "as long as" or "as short as" another object • We can describe an object as being "x cubes long."	• Recognize and explain numerals have a repeating pattern between 100−120. • Write numerals 0−120. • Represent objects with a written numeral (1−120).

Key Vocabulary: order, shorter than, longer than, compare, indirectly, expressions, cube towers, x cubes long, measure, count, units, analyze, match, equations, story problems, compare story problems, take from story problems, gaps, overlaps, unknowns, represent

Assessment Evidence

Performance Tasks:	**Other Evidence:**
Students compare the lengths of rectangles. Students measure the length of a rectangle using connecting cubes. Students compare the length of two objects by comparing both with a third object. Students identify the number of objects in a collection between 100 and 120, grouped as 10 tens and some ones. Students subtract within 20 to solve a Compare problem with the smaller value unknown, in a	Various checkpoints throughout the unit for the following: • Order objects by length. • Compare the lengths of objects indirectly. ◦ Compare objects directly by lining them up at an endpoint.

measurement context. Students write an equation to represent a Start Unknown story problem and then they find the solution to the problem.	○ Use precise language (“longer than,” “shorter than”) to describe and compare lengths of objects. ○ Order three objects by length. ○ Compare the length of two objects indirectly using a third object. ○ Choose an object to compare the lengths of other objects indirectly. ● Lay length units end-to-end with no gaps or overlaps and count the units to determine length. ○ Measure length by iterating length units. ○ Explain why measurements of the length of the same object can be different. ● Count groups of up to 120 objects and write a number to represent them. ○ Read and write numbers 100–120. ○ Count a group of 100–120 objects and represent it with a written number. ● Solve story problems within 20 with unknowns in all positions. ○ Retell the story. ○ Represent the story with objects or drawings. ○ Explain how their representation matches the story. ○ Represent the story with equations.

Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn’t work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students measure length and count up to 120 length units. They solve addition and subtraction story problems with unknowns in all positions.

In this unit, students extend their knowledge of linear measurement while continuing to develop their understanding of operations, algebraic thinking, and place value.
In kindergarten, students identified attributes of objects that can be compared, such as length, weight, and capacity. In this unit, students compare the length of objects by lining them up at their endpoints, and explore ways to compare lengths of two objects that cannot be lined up.

From there, they transition to the idea of iterating length units, or using the same length unit allows us to measure the lengths of objects and to communicate measurements clearly.



Students begin by using the length of a connecting cube as a unit of measurement. Because connecting cubes snap together, students can focus on counting the length of the cubes without worrying about any gaps or overlaps in the units.

Later, students measure with length units that don't connect together, such as paper clips and base-ten cubes (centimeter cubes), but do not refer to formal units of length. They develop precision as they make sure that there are no gaps or overlap in the units used to measure.
Some objects that students measure by iterating small units yield measurements of over 100 length units. Students consider how to count and represent these larger groups of objects—up to 120—with a written number. They use familiar representations (connecting cubes and base-ten drawings) to recognize 100 as 10 tens, but do not consider the unit of a hundred until grade 2.

Later in the unit, students solve problems in various contexts, including measurement. They revisit Compare, Difference Unknown story problems and learn to solve Compare, Bigger Unknown and Smaller Unknown problems about lengths. Next, students are introduced to a new problem type: Take From, Start Unknown. They practice solving all story problems types with unknowns in all positions.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 7 - Geometry and Time

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

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

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.

- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...

- Shapes are all around our world and can be put together or taken apart to form other shapes.
- Objects can be sorted, described or built based on certain attributes.
- Decomposing into more equal shares creates smaller shares.
- When dividing a shape into equal shares, the pieces all need to represent the same amount.
- Time is measured in hours and minutes and can be shown on different kinds of clocks.

Essential Questions:

- How are shapes used in the real world?
- How are shapes unique?
- What is the result of dividing a shape into equal shares?
- How does the number of shares affect the size?
- How is time measured?

Students will know...

- Properties of shapes.
- Rectangles, squares, trapezoids, and triangles are two-dimensional closed shapes having straight sides that meet at corners.
- Color, size, and orientation are non-defining attributes.
- Shapes can be combined to form larger shapes:
- two-dimensional shapes with two-dimensional shapes
- three-dimensional shapes with three-dimensional shapes
- Part-whole relationship of shapes.
- As the number of equal shares in a shape increases, the size of each equal share decreases, e.g.,fourths are smaller than halves.
- As the number of equal shares in a shape decreases, the size of each equal share increases, e.g., halves are larger than fourths.
- Time is a measurable attribute.
- Time can be measured using an analog clock with an hour hand (short) and minute hand (long).

Students will be able to...

- Determine which attributes of a shape are defining compared to attributes that are non-defining using models or pictures.
- Build and draw shapes to possess defining attributes.
- Build two-dimensional composite shapes from other shapes.
- Build three-dimensional composite shapes from other shapes.
- Distinguish between defining attributes and non-defining attributes.
- Explore classifying shapes based on defining attributes.
- Create a composite shape from two-dimensional shapes.
- Compose new shapes from composite two-dimensional shapes.
- Create a composite shape from three-dimensional shapes.
- Compose new shapes from composite three-dimensional shapes.
- Divide circles and rectangles into two and four equal parts. Describe the pieces by using the words halves, fourths, and quarters.

• Time can be measured using a digital clock, e.g., 11 o'clock is represented as 11:00.	• Put the pieces back together to make a whole. Describe the whole as 2 halves or 4 fourths. • Explore and describe part-whole relationships. • Relate two or four equal shares to circles and rectangles. • Describe equal shares using the terms halves, fourths, quarters and the phrases half of, fourth of, quarter of in real-world contexts. • Explore the decomposition of shapes into halves and fourths; decomposing them into more equal shares creates smaller shares. • Explore and explain which figures are correctly partitioned into halves or fourths. • Recognize the difference between the hour hand and the minute hand. • Determine where the minute hand must be when the time is to the hour (o'clock). • Determine where the minute hand must be when the time is to the half hour (thirty). • Compare analog clocks to digital clocks and recognize the relationship between the two. • Recognize that numerals, or other markings, on a clock represent the hours. • Explore and explain an hour as 60 minutes and half of one hour as 30 minutes. • Use mathematical vocabulary to identify clock types and parts, e.g., hour hand, minute hand, analog, digital, etc. • Interpret time on the hour and half hour on analog and digital clocks. • Write time symbolically using a colon (:) to separate hours and minutes.
Key Vocabulary: Attribute, Flat, Shape, Solid, 2-dimensional, 3-dimensional, Circle, Composite shape, Cone, Cube, Cylinder, Hexagon, Rectangle, Rectangular prism, Sphere, Square, Triangle, Decomposing, Equal shares, Fourths, Halves, Partition, Quarters, Shares, Circles, Fourth of, Half circle, Half of, Quarter of, Wholes, Clock, time, analog, digital, half hour, hour, hour hand, minute, minute hand	

Assessment Evidence	

Performance Tasks:
Students identify triangles. Students draw different shapes using dot paper. Students shade half of a circle and a quarter of a square. Students identify whether or not the same amount of a square is shaded. Students read time from clocks. Students tell time from an analog clock and write the digital time to match.
	Other Evidence:
	Various checkpoints throughout the unit for the following:
	● Describe attributes of two-dimensional and three-dimensional shapes.
	  ● Describe attributes of two-dimensional and three-dimensional shapes using informal vocabulary (smooth, pointy, like a box).
	  ● Describe the sides and corners of two-dimensional and three-dimensional shapes using informal vocabulary (corners, points, square corners, sides, long sides, short sides).
	● Compose two-dimensional or three-dimensional shapes to create a composite shape.
	  ● Put two-dimensional or three dimensional shapes together to form larger shapes or objects.
	  ● Describe the composite shape and the shapes that make up the composite shape.
	● Build and draw shapes to possess defining attributes.
	  ● Recognize defining attributes of shapes.
	  ● Draw shapes with given attributes.
	● Partition circles and rectangles into two and four equal pieces, describe the pieces with words (halves and fourths).
	  ● Identify when a shape is split into equal pieces.
	  ● Partition a circle or rectangle into halves or fourths.
	  ● Identify how much of a shape is shaded using the language “a half of,” “a fourth of,” “a quarter of,” “two of the halves,” and “four of the fourths.”
	  ● Understand that for halves and fourths, partitioning a shape into more equal pieces creates smaller pieces.
	● Tell and write time in hours and half-hours.
	  ● Identify the hour hand and minute hand on a clock.
	  ● Identify that when the minute hand points to the 12 it is “o’clock” and ___:00.
	  ● Identify that when the minute hand points to the 6 it is “half past” and ___:30.

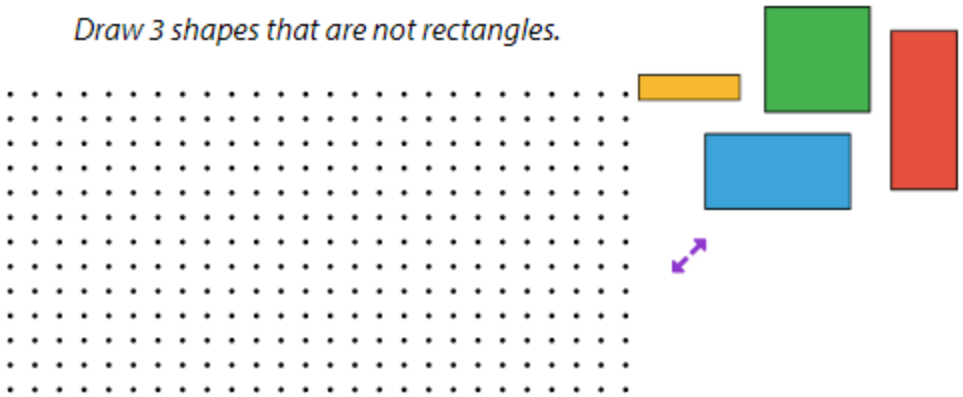
	● Tell time from analog and digital clocks. ● Draw hands on a clock to show a given time in hours or half hours. ● Write the time using digits (___:___) to match an analog clock to the hour and half hour.

Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I've learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students reason with shapes and their attributes, partition shapes into equal pieces, and tell time to the hour and half hour.

In this unit, students focus on geometry and time. They expand their knowledge of two- and three-dimensional shapes, partition shapes into halves and fourths, and tell time to the hour and half of an hour. Center activities and warm-ups continue to enable students to solidify their work with adding and subtracting within 20 and adding within 100.
In kindergarten, students learned about flat and solid shapes. They named, described, built, and compared shapes. They learned the names of some flat shapes (triangle, circle, square, and rectangle) and some solid shapes (cube, sphere, cylinder, and cone).
Here, students extend those experiences as they work with shape cards, pattern blocks, geoblocks, and solid shapes. They develop increasingly precise vocabulary as they use defining attributes ("squares have four equal length sides") rather than non-defining attributes ("the square is blue") to describe why a specific shape belongs to a given category. Students should, however, focus on manipulating, comparing, and composing shapes and using their own language, rather than learning the formal definitions of shapes.
Draw 3 shapes that are not rectangles.



How do you know these are not rectangles?

Next, students transition to thinking about how to partition shapes into halves and fourths or quarters. These experiences allow them to learn the language of fractions. Students come to understand that as they continue to make more equal pieces, each piece gets smaller.
In the last section, students tell time to the hour and half hour. They learn about the hour and minute hands and what an analog clock looks like when the hour hand moves from one hour to the next. The experience of partitioning circles helps students make sense of time on the clock. Students see that half hours are when the minute hand has moved halfway around the clock, and the time can be written as “half past” or __ : 30.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits

Unit 8 - Putting it All Together

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals:

- 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 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 = _.
- 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 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.OA.A.1:Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.A.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 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.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.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: Use place value understanding and properties of operations to add and subtract.

Vision of A Learner Attributes: Students will be able to independently use their learning to... (“I can” statements to be demonstrated)

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.

- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.
- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

Understandings: Students will understand that...	**Essential Questions:**
• Learning is best demonstrated by the ability to apply what we have learned to new situations.	• How can I show what I have learned?
Students will know...	**Students will be able to...**
• The relationship between addition and subtraction • There are different ways to solve problems and each person may choose the one that works best for them • Making a ten can help with addition and subtraction • The two digits in a two-digit number represent amounts of tens and ones and that numbers can also be composed of different amounts of tens and ones.	• Solve Add To and Take From, Change Unknown story problems in a way that makes sense to them. • Solve Put Together/Take Apart, Addend Unknown story problems in a way that makes sense to them. • Solve Compare, Difference Unknown story problems in a way that makes sense to them. • Count to 120, starting at a number other than 1. • Organize, count, and represent a collection of up to 120 objects or images. • Represent two-digit numbers in different ways. • Apply place value understanding to solve number riddles. • Apply place value reasoning to write and solve number riddles.

Key Vocabulary: add to, take from, change unknown, story problems, put together, take apart, addend unknown, compare, difference unknown, count, organize, represent, collection, two-digit numbers, place value, solve, riddles, value reasoning, relationship, strategy

Assessment Evidence

Performance Tasks:	**Other Evidence:**
Students identify the number of connecting cubes in different images. Students find the value of expressions within 20 and explain their thinking. They may use equations or draw pictures. Students find the	Various checkpoints throughout the unit for the following: • Fluently add and subtract within 10. • Add fluently within 10.

value of sums and differences within 100. Students solve a Compare, Difference Unknown story problem. Students solve a Put Together, Addend Unknown story problem.Students solve a Take Away, Result Unknown story problem. Students add 3 numbers within 20 to solve a story problem. Students may solve in any way that makes sense to them including using objects or drawings. Students make sense of two different ways to subtract from a teen number. Students select correct equations. Students find the number that makes addition and subtraction equations within 20 true. Students compare two-digit numbers using > and < . Students identify an inaccurate length measurement. Students compare lengths of three objects. They are not given measurements so the item assesses student ability to indirectly compare the length of two objects using a third object and also assesses their understanding that each comparison can be made using “shorter” or “longer.” Mentally add or subtract 10 from a 2-digit number. Students demonstrate fluency for addition and subtraction within 10 and also work on sums of single-digit numbers. Students compare the value of a sum with a two-digit number using > , < , and = . Students choose the numbers for a data survey given constraints.	- Subtract fluently within 10. - Add and subtract within 20. - Use the relationship between addition and subtraction. - Make 10 when adding or subtracting within 20. - Solve Add To and Take From, Change Unknown story problems in a way that makes sense to them. - Solve Put Together and Take Apart, One Addend Unknown story problems in a way that makes sense to them. - Solve Compare, Difference Unknown story problems in a way that makes sense to them. - Retell the story. - Represent the story with objects or drawings. - Represent the story with equations. - Explain how their representation matches the story. - Answer the question correctly. - Count a group of up to 120 objects. - Say the count sequence up to 120. - Organize objects to make counting large groups of objects easier. - Apply place value understanding to represent a quantity with written numerals and expressions. - Read and write numbers within 120. - Represent numbers to show the base-ten structure. - Represent the same number with different amounts of tens and ones.

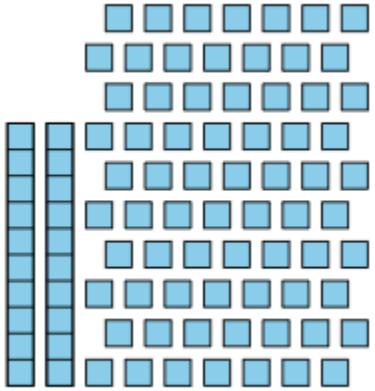
Learning Plan

- TCC1(PK-2): I can ask questions to solve a problem.
- TCC3(PK-2): I can use what I’ve learned to come up with a solution.
- CCE1(PK-2): I can share my ideas with help and show that I respect others.
- CCE4(PK-2): I can come up with ideas and share them with others in a way they can understand.
- TI1(PK-2): I can use pictures or models to decide what to do next.
- TI2(PK-2): I can explore and use tools that work best for me.
- TI4(PK-2): I can try, even when things are difficult, and know I will eventually improve.
- P2(PK-2): I can use a strategy to keep trying even when something is hard.

- AA1(PK-2): I can use a strategy, test it out and try something new if it doesn't work.
- AA2(PK-2): I can think about what worked for me or others and try it again.

- Students consolidate and solidify their understanding of various concepts and skills on major work of the grade. They also continue to work toward fluency goals of the grade.

In this unit, students revisit major work and fluency goals of the grade, applying their learning from the year.
In Section A, students add and subtract within 20, concurrently working toward the goal of adding and subtracting fluently within 10. In Section B, they practice solving story problems of familiar types (those introduced in earlier units). In Section C, students count and represent numbers within 120.
Each of these topics is critical for students' readiness for the work in grade 2, in which students will expand their understanding of place value and add and subtract within 100.
What number is shown?
Record an estimate that is too low, too high, and about right.



The sections in this unit are standalone sections, not required to be completed in order. The goal is to offer ample opportunities for students to integrate the knowledge they have gained and to practice skills related to the expected fluencies of the grade.

Teacher Resources: Imagine Learning Classroom, Kendall Hunt Illustrative Math Site, Teacher Resource Books, Center Kits