| Select a Course: | Math Grade 1 |
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| Teacher: | CORE Math Grade 1 |
| Course: | Math Grade 1 |
| Year: | $2016-17$ |
| Months: | - All - |

## © 合 <br> Enduring Understandings

## Grade 1 Math Measurement, Counting and Data



Numbers are used to show how many objects are in a group.


Numbers show how long or far away objects can be.There is an order for saying and writing numbers.

- Graphs use numbers to organize and show a quanity.

$\pi$
Objects and their indirect relationships can be described using measurement.

## Essential Questions

10
What are units and what do they represent?

- How can comparisons of numbers be modeled?

Why are numbers important?
4. When and how do we measure length?

## Standards

1.MD.A. 1 - Measure lengths indirectly and by iterating length units ~ Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1.MD.A. 2 - Measure lengths indirectly and by iterating length units ~ 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.
1.NBT.A. 1 - Extend the counting sequence $\sim$ 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.

## Knowledge \& Skills

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## Academic Language

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Order and compare three objects by length. (1.MD.1)Compare the length of two objects indirectly by using a third object. (1.MD.1)


Measure length of an object by laying multiple copies of a shorter object end to end. (1.MD.2)

Represent the length of an object as the total number of units represented by multiple copies of a shorter object laid end-to-end. (1.MD.2)

Apply \& explain the importance of making sure that there are not any gaps or overlaps in order to get an accurate measurement (1.MD.2)

Count within 120 starting at any number less than 120
(1.NBT.1)

Read and write any number within 120 (1.NBT.1)

When given a set of objects (within 120), represent the quantity with a writtennumeral (1.NBT.1)

ต
Critical Terms:
Model
Units
Measure
Order
Compare
Data
Supplemental
Terms:
Longer Shorter Fewer Greater
Equal
Count
Number
Numeral

|  |  |  | Organize data with up to three categories in various ways. (1.MD.4) <br> Create a representation of data into a graph (1.MD.4) <br> Ask and answer quantity and comparison questions about the data represented in graphs or tables (1.MD.4) |
| :---: | :---: | :---: | :---: |
|  |  |  |  |

Grade 1 Math Addition and Subtraction to 10 Counting concepts and procedures to organize and represent data using a graph using numbers within 10. Addition and subtraction concepts and procedures to ask and answer questions about data represented in graphs of up to three categories. Use problem solving structures to solve word problems within 10 (using both two and three whole numbers) involving all situations using objects, drawings, and equations.

## Enduring Understandings

Numbers are composed of other numbers.


Word problems have basic problem solving structures including: Adding To, Taking from, putting together, taking apart, and comparing.

Unknowns can be in various locations (start, change, result) in equations and can develop from combinations of numbers

Addition and subtraction are related/inverse operations.

Various strategies can be used to quickly add numbers.

The equal sign is used to represent quantities that have the same value.

## Essential

 QuestionsWhat is the relationship of addition and subtraction?

How do we determine the value of a number?

Why do we take apart and put together numbers?
6. How can the structure of a word problem or equation help us to solve it?
Why are
properties important
in solving equations?
What is the
purpose of the equal
sign?

## Standards

1.MD.C. 4 - Represent and interpret data ~ 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.NBT.A. 1 - Extend the counting sequence $\sim$ 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 - Represent and solve problems involving addition and subtraction ~ 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 - Represent and solve problems involving addition and subtraction ~ 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. 3 - Understand and apply properties of operations and the relationship between addition and subtraction ~ Apply properties of

## Knowledge

 \& SkillsDifferent problem solving strategies for composing and decomposing numbers to solve addition and subtraction problems (for example: make a 10, use doubles, or number lines).

The meaning of the $=$ sign
Explain how
counting on and
counting back relate
to addition and
subtraction. (1.OA.5)

## 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. (1.OA.1)Solve word problems involving situations of putting together and taking apart using objects, drawings, and equations with a
## Academic

 Language
## (1) Critical Terms:

Addition
Subtraction
Equation
Equal
Equal sign
Adding to
Taking from
Putting together
Taking apart
Comparing
Remainder
Difference
Sum
Unknown

## Supplemental

Terms:
Plus sign
Minus sign
More
Less
Greater
Symbol
Start
Change
Result Number bonds

Enduring
Understandings
Essential
Standards Questions
发 Knowledge \＆Skills

## 备 Grade 1 Math Addition and Subtraction to 20

## Enduring Understandings

Properties of addition and subtraction reflect the relationship of addition and subtraction as the parts of the whole within an equation．

Strategies can be used to decompose complex problems to make an easier problem（counting on，make a ten，near ten，doubles， doubles＋1．＋2）

Word problems can be represented using multiple modalities

Problem solving structures reinforce part／part／whole and number combinations within twenty

Unknowns can be in different places．（start， change，results）

－
There are different problem solving structures including：adding to，taking from，putting together，taking apart，comparison．

Value of a digit may be different depending upon its place in the number．

Numbers can be compared to other numbers by using the words greater than less than or equal to．

## Essential Questions <br> Standards

园
How are strategies and properties used when adding and subtracting？

How are teen numbers composed and decomposed？

How are models， symbols，and words used to compare numbers？

－
How does identifying and representing problem solving structures help us solve for unknowns？

1．MD．C． 4 －Represent and interpret data ～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．NBT．A． 1 －Extend the counting sequence～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 place value～ Understand that the two digits of a two－ digit number represent amounts of tens and ones．

1．NBT．B． 3 －Understand place value～ 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．B．2a－Understand place value～ 10 can be thought of as a bundle of ten ones－called a＂ten．＂

1．NBT．B．2b－Understand place value～ 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．2c－Understand place value～ 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．OA．A． 1 －Represent and solve problems involving addition and subtraction～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 －Represent and solve problems involving addition and subtraction～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

## Knowledge \＆Skills

## Academic Language



Knowledge： Students will know．．． Strategies to quickly solve addition and subtraction problems within twenty

## A．Knowledge：

 Students will know．．． Each type of word problem situation （adding to，taking from，putting together， taking apart， comparing）Knowledge：
Students will know．．． All three unknown problem types （results，change，start）

Skill：Students will be able to ．．． Use addition and subtraction within 20 to solve word problems involving situations of adding to， taking from，putting together，taking apart， and comparing involving results unknown using objects，drawings，and equations with a symbol for the unknown number． （1．OA．1）

Skill：Students will be able to ．．． Use addition and subtraction within 20 to solve word problems involving situations of adding to， taking from，putting together，taking apart， and comparing involving change unknown using objects，drawings，and equations with a

Critical Terms：
Addition
Subtraction
Equation
Equal
Equal sign
Adding to
Taking from
Putting together
Taking apart
Comparing
Remainder
Difference
Sum
Unknown
Digit
Place
value
Tens
Ones


Terms：
Plus sign
Minus sign
More
Less
Greater
Symbol
Start
Change Result

| number to represent the problem. <br> 1.OA.B. 3 - Understand and apply properties of operations and the relationship between addition and subtraction ~ Apply properties of operations as strategies to add and subtract | symbol for the |
| :---: | :---: |
|  | unknown numb (1.OA.1) |
|  | be able to ... <br> Use addition and subtraction within 20 |
| 1.OA.B. 4 - Understand and apply properties of operations and the relationship between addition and subtraction ~ Understand subtraction as an unknown-addend problem. | to solve word problems involving situations of adding to taking from, putting together, taking apart, and comparing |
| 1.OA.C. 5 - Add and subtract within 20 ~ Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | involving start unknown using objects, drawings, and equations with a symbol for the |
| 1.OA.C. 6 - Add and subtract within 20 ~ Add and subtract within 20 , demonstrating fluency for addition and subtraction within 10 . Use strategies such as counting on; making ten (e.g., 8 | unknown number. (1.OA.1) |
|  | - Skill: Stude |
|  | be able to ... |
| $+6=8+2+4=10+4=14)$ <br> decomposing a number leading to a ten | involving three |
| decomposing a number leading to a ten (e.g., $13-4=13-3-1=10-1=9$ ); using the relationship between addition | addends whose sum |
| 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). | is less than 20 using |
|  | objects, drawings, and equations with a |
|  | symbol for th |
|  | unknown number. (1.OA.2) |
|  |  |
| 1.OA.D. 7 - Work with addition and subtraction equations ~ 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. | Skill: Students will be able to ... Use and explain strategies for solving word problems involving three addends. (1.OA.2) |
|  | Skill: Students be able to ... |
| 1.OA.D. 8 - Work with addition and subtraction equations ~ Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. | Apply the |
|  | commutative property of operations as a strategy to add and subtract. (1.OA.3) |
|  | Skill: Students will be able to ... Apply the associative property of operations as a strategy to add and subtract. (1.OA.3) |
|  | Skill: Students will be able to ... Identify the unknown in a subtraction problem by showing the relationship between addition and subtraction. (1.OA.4) |
|  | Skill: Students will be able to ... Add by counting all, |

counting on, and recognizing that +1 means the next number and that +2 means the number that is two numbers after in the counting sequence. (1.OA.5)

- Skill: Students will be able to ...
Subtract by counting back, counting up from, and recognizing that -1 means the number before, and that -2 means the number that is two numbers before in the counting sequence. (1.OA.5)

Skill: Students will be able to ..
Fluently add and subtract within 10. (1.OA.6)

ก Skill: Students will be able to ...
Add and subtract within twenty,
demonstrating fluency for addition and subtraction within ten.

ก Skill: Students will be able to ...
Add and subtract within twenty, demonstrating fluency for addition and subtraction within ten. Use strategies such as counting on, making 10 , decomposing a number leading to 10 , doubles, using the relationship between addition \& subtraction, and creating equivalent but lesser known sums. (1.OA.6)

Skill: Students will be able to ... Demonstrate and explain the meaning of equality with visual models and words. (1.OA.7)

Skill: Students will be able to ... Identify if equations are true or false. (1.OA.7)
——4
Skill: Students will be able to .. Determine the unknown whole number in an addition equation relating to three whole numbers. (1.OA.8)
Skill: Students will be able to .. Determine the unknown whole number in a subtraction equation relating to three whole numbers. (1.OA.8)
A Skill: Students will....
Count to 120 starting at any number (1.NBT.1)
(f) Skill: Students will...
Read numbers to 120
(1.NBT.1)
© Skill: Students will be able to....
Write numbers to represent any number of objects to 120 (1.NBT.1)

- Skill: Students will be able to....
Explain the value of each digit in a two digit number (1.NBT.2)
กt Skill: Students will be able to....
Identify a bundle of 10 ones as a "ten"
(1.NBT.2)
Skill: Students will be able to....
Represent a 2 digit numeral using "tens" and "ones" (1.NBT.2)
© Skill: Students will be able to....
Represent a 2 digit numeral ending in 0 (ranging from 10-90) using "tens" and 0 "ones" (1.NBT.2)
Skill: Students will be able to....
Describe number of tens and ones to determine value of number.(1.NBT.3)Skill: Students will be able to.... Use models to represent two sets of numbers. Use comparison words greater than, less than, and equal to communicate understanding of the relationship between the numbers.
(1.NBT.3)

Skill: Students will be able to....
Organize data with up to three categories in various ways.
(1.MD.4)

Skill: Students will be able to....
Create a
representation of data into a graph. (1.MD.4)

Skill: Students will be able to....
Asking and answer quantity and comparison questions about the data represented in graphs or tables. (1.MD.4)

## 目 <br> Enduring Understandings

## Grade 1 Math 2-Digit Place Value

Students will understand that ...A unit of 10 is made of 10 ones.

Students will understand that ...
Two-digit numbers are composed of units of tens and some ones.

Students will understand that ...
Numbers can be represented in different ways to demonstrate tens and ones in a two digit number.

ใtudents will understand that ...
Comparison symbols (<, >, $=$ ) are used to show the relationship between

## Essential Questions

 of strategy you use indicate how much you know about place value?

What is significant about the teen numbers (related to 10)?How is counting connected to quantity in a number?

## Standards

1.MD.C. 4 - Represent and interpret data ~ 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.NBT.A. 1 - Extend the counting sequence $\sim$ 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 place value ~ Understand that the two digits of a twodigit number represent amounts of tens and ones.
1.NBT.B. 3 - Understand place value ~ 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.B.2a - Understand place value ~ 10 can be thought of as a bundle of ten



目 Grade 1 Math Addition and Subtraction within 100

## Enduring Understandings <br> Essential Questions Standards弪 <br> Knowledge 8. Skills

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Two digit numbers are composed of groups of tens and some ones.

Decade numbers are groups or units of tens.

ㄴ Commutative and Associative Properties demonstrate decomposing and representing numbers within equations.

Counting is connected to adding and subtracting

Identification of 10 more/10 less is the same as adding or subtracting ten.

Addition can be used to solve subtraction.

Decomposing numbers so that the numbers can be recombined for a 10 or group of 10 , and some more.

How do addition and subtraction relate to counting?

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

How does using objects and drawings help me represent problems in multiple ways?

What do equations represent?
1.NBT.A. 1 - Extend the counting sequence ~ 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.C. 4 - Use place value understanding and properties of operations to add and subtract ~ 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 - Use place value understanding and properties of operations to add and subtract ~ 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 - Use place value understanding and properties of operations to add and subtract ~ Subtract multiples of 10 in the range 1090 from multiples of 10 in the range 1090 (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.B. 3 - Understand and apply properties of operations and the relationship between addition and subtraction ~ Apply properties of operations as strategies to add and subtract
1.OA.B. 4 - Understand and apply properties of operations and the relationship between addition and subtraction ~ Understand subtraction as an unknown-addend problem.
1.OA.C. 5 - Add and subtract within 20 ~ Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
1.OA.D. 7 - Work with addition and subtraction equations $\sim$ 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.

Knowledge:
Students will know... Decompositions of number within 10KNowledge:
Students will know.....
Strategies of near ten, doubles, doubles +1 , +2
Knowledge:
Students will know.....
Counting sequence to 120

Skills: Students
will be able to do... Use concrete models or drawings and strategies to add within 100 and record using vertical and horizontal symbolic models. (1.NBT.4)

- Skills: Students will be able to do... Use concrete models or drawings and strategies to subtract within 100 and record using vertical and horizontal symbolic models. (1.NBT.4)

Skills: Students will be able to do... When given a set of objects (ranging from $0-120$ ), represent the quantity with a written numeral (1.NBT.1)Skills: Students will be able to do... Use concrete models, drawings and place value strategies to subtract multiples of ten from decade numbers. (1.NBT.6)

- Critical Terms:

Compose
Decompose
Sum
Difference
Equal
True
False
Unit Group
Unknown
Addend
Part/part/whole mentally
Multiple of 10
Decade
슨 Supplemental
Terms:
Properties of Operations Commutative Property Associative Property Relationship
1.OA.D. 8 - Work with addition and subtraction equations ~ Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.

## 든 Enduring

## Enduring <br> Understandings

Essential Questions
永
Knowledge \& Skillls

## Academic Language

## 图 Grade 1 Math Geometry and Time

## Enduring Understandings

Shapes are all around our world and can be put together or taken apart to form other shapes.

Time is measured in hours and minutes and can be shown on different kinds of clocks.

Decomposing into more equal shares creates smaller shares

Objects can be sorted, described or built based on certain attributes.

## Essential Questions

슴
How is time measured?

- How are shapes unique?

How are shapes used in the real world?

How are dividing a circle and telling time related?

## Standards

1.G.A. 1 - Reason with shapes and their attributes ~ 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 - Reason with shapes and their attributes ~ 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 - Reason with shapes and their attributes ~ 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.MD.B. 3 - Tell and write time $\sim$ Tell and write time in hours and half-hours using analog and digital clocks.

## Knowledge \& Skills

## Academic Language

## Academic Language

## Knowledge <br> \& Skills

|  |  |  |  |  | fourths. (1.G.3) <br> Recognize the difference between the hour hand and the minute hand. (1.MD.3) <br> Determine where the minute hand must be when the time is to the hour (o'clock). (1.MD.3) <br> Determine where the minute hand must be when the time is to the half hour (thirty). (1.MD.3) <br> Compare analog clocks to digital clocks and recognize the relationship between the two. (1.MD.3) <br> Count to 120 starting at any number less than 120 <br> (1.NBT.1) <br> Read and write any number from 0120 (1.NBT.1) <br> When given a set of objects (ranging from 0-120), represent the quantity with a written numeral (1.NBT.1) <br> Organize data with up to three categories in various ways. (1.MD.4) <br> Create a representation of data into a graph (1.MD.4) <br> Asking and answer quantity and comparison questions about the data represented in graphs or tables. (1.MD.4) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \frac{9}{3} \\ & \frac{5}{3} \\ & \hline \end{aligned}$ | Enduring Understandings | Essential Questions | Standards | § | Knowledge \& Skills | Academic Language |
| $\frac{2}{3}$ | Enduring Understandings | Essential Questions | Standards | § | Knowledge \& Skills | Academic Language |

