

# Unit 3 - Addition and Subtraction, Foundations of Place Value

Content Area: **Mathematics**  
Course(s): **Mathematics 1, Mathematics K**  
Time Period: **February**  
Length: **10 weeks**  
Status: **Published**

## Enduring Understandings

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Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from

Know number names and the count sequence to 20

Count to tell the number of objects to 20

Compose and Decompose Numbers 11 to 19

Work with numbers 11-19 to gain foundations for place value

## Essential Questions

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How can I show addition and subtraction with objects, fingers, mental images, drawings and sounds?

How can I solve addition and subtraction word problems by adding and subtracting within 10?

How can I use drawings and objects to solve an addition or subtraction problem within 10?

When using numbers from 0-9, how can I use addition to come up with a total of 10 by using objects and drawings?

How can I record answers to addition problems by using drawings and equations?

How can I separate numbers less than or equal to 10 into pairs in more than one way?

How can I easily add and subtract within 5?

## Content

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### Key Vocabulary:

Topic 7 : left, separate, subtraction sentence, take away, minus sign (-), subtract, difference

Topic 8: break apart, operation

Topic 9: eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, row

Topic 10: "How many more?"

Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

Understand the relationship between numbers and quantities; connect counting to cardinality.

Understand that each successive number name refers to a quantity that is one larger.

Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. \*(benchmarked)

Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group e.g. by using matching and counting strategies.

Compare two numbers between 1 and 10 presented as written numerals

Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. \*(benchmarked)

Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Demonstrate fluency for addition and subtraction within 5 (by the end of Kindergarten). \*(benchmarked)

Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. \*(benchmarked)

## **Skills**

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Students will:

- count orally by ones up to 50 , beginning at any number.
- identify the last number named as the number of objects counted
- identify the next number name in counting as one greater than the previous number
- count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration.
- count to tell the number of objects when asked "how many?" questions.
- given a number from 1-20, count out that many object.
- compare the number of objects (up to 10) in two groups.
- identify whether the number of objects in one group is greater than, less than, or equal to to the number of objects in another group.
- compare numbers (up to 10) written as numerals.
- create subtraction and addition events with objects (up to 10).
- create subtraction and addition events with drawings and sounds (up to 10).
- create subtraction and addition events by acting out situations and with verbal explanations.
- use objects and drawings to represent addition and subtraction.

- add and subtract within 10.
- add within 5 with accuracy and efficiency.
- sort objects into groups.
- sort the group by count.

## **Resources**

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EnVision Materials for Topic 7, 8, 9, and 10 including student edition worksheets, problem solving mat, interactive math story, vocabulary cards, and center ideas which are listed in each topic

[www.illustrativemathematics.org](http://www.illustrativemathematics.org)

Start-Stop Counting

Assessing Writing Numbers

Number TIC TAC TOE

Counting Mat

Finding Equal Groups

What makes a Teen Number

Ten Frame Addition

Dice Addition 2

What's missing?

Pick Two

Shake and Spill

Many Way to do Addition I

[Addition and Subtraction within 20 ideas and activities](#)

[Paper Plate Addition](#)

## [Kindergarten Math Printables for Review/Centers](#)

### [70 Math Games/Activities for the Classroom](#)

#### **Literature Connection:**

Interactive Math Stories for each Topic from Pearson 2.0

100 Days of Cool by Stuart J. Murphy

100 School Days by Anne Rockwell

100th Day Worries by Margery Cuyler

Miss Bindergarten Celebrates the 100th Day of Kindergarten by Joseph Slate

Curious George Learns to Count from 1 to 100 by H. A. Rey

From One to One Hundred by Teri Sloat

One Hundred Hungry Ants By Elinor J. Pinczes

The Mission of Addition By Brian P. Cleary

The Action of Subtraction By Brian P. Cleary

Heavy and Light by Joan Chapman

Is it Larger? Is It Smaller? by Tana Hoban

The Long and Short of It by Cheryl Nathan

Math Counts: Weight by Henry Arthur Pluckrose

Mighty Maddie by Stuart J. Murphy

Who's Short? Who's Tall? by Kailee Herbst

Size (Math Counts) by Henry Pluckrose

The Giant Carrot by Jan Peck

The Enormous Potato by Aubrey Davis

Block City by Robert Louis Stevenson

Each Peach Pear Plum by Janet and Allan Ahlberg

Jump, Frog, Jump! by Robert Kalan

Math Counts: Sorting by Henry Arthur Pluckrose

Rosie's Walk by Pat Hutchins

3 Little Firefighters by Stuart J. Murphy

More or Less by Rebecca Fjelland Davis

#### **Technology Connection**

Animated Glossary

Brain Pop

Brain Pop Jr

Educreations

enVisions 2.0

Google Classroom

i-Ready

ixl.xom

Kahoot

Khan Academy

Learn Zillion

Math Playground

Poppet

Scholastic Study Jams

SeeSaw

ThatQuiz

XtraMath

## **IPAD APPS**

Flash to Pass

Animal Math

123 My Connect Dots Animal

Number Frames

Park Math

Geoboard

Pattern Shapes

## **Standards**

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MA.K.CC.A.2

Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

MA.K.CC.A.3

Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

MA.K.CC.B.5	Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
MA.K.CC.B.4c	Understand that each successive number name refers to a quantity that is one larger.
MA.K.OA.A.1	Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
MA.K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
MA.K.OA.A.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$ ).
MA.K.OA.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
MA.K.OA.A.5	Demonstrate fluency for addition and subtraction within 5.
MA.K.NBT.A.1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.