

03-Numbers and Operations in Base Ten

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **8 weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

Kindergarten instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

1. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.
2. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

In this unit, students will focus on the following skills and concepts:

- 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.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Enduring Understandings:

- Place value is the meaning of a number based on its position.
- Breaking numbers apart by groups of tens and ones helps us understand larger numbers.

Essential Questions:

- Why do we compose and decompose numbers?
- What is place value?
- Why do we break numbers apart into tens and ones?
- How can drawings and objects be used to compose and separate numbers from 11- 19?

CONTENT AREA STANDARDS

MA.K.NBT	Number and Operations in Base Ten
MA.K.NBT.A	Work with numbers 11–19 to gain foundations for place value.
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-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.SL.K.1	Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
LA.SL.K.1.A	Follow agreed-upon norms for discussions (e.g., listening to others with care and taking turns speaking about the topics and texts under discussion).
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
WRK.K-12.P.1	Act as a responsible and contributing community members and employee.
WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
TECH.K-12.P.1	Act as a responsible and contributing community members and employee.

STUDENT LEARNING TARGETS

- I can compose (create) numbers 11 to 19 using models

- (e.g., objects, drawings, charts, ten frames, etc.)
- I can decompose (break apart) numbers 11 to 19 using models
 - (e.g., objects, drawings, charts, ten frames, etc.)
- I can record compositions or decompositions of numbers using a drawing or equation
 - (e.g., $18 = 10 + 8$)
- I can explain how 2 digit numbers from 11 to 19 are made of ten ones and some more ones

Declarative Knowledge

Students will understand:

- 10 can be thought of as a bundle of ten ones, called a "ten."
- Two-digit numbers represent amounts of tens and ones.
- Teen numbers (11-19) can be composed of ten ones and a one, two three, four, five, six, seven, eight, or nine ones.
- Composing and decomposing numbers into tens and ones will help solve problems.
- Essential Vocabulary: compose, decompose, ones, tens

Procedural Knowledge

Students will be able to:

- read two-digit numbers
- 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.

EVIDENCE OF LEARNING

Refer to the 'Formative Assessments' and 'Summative Assessments' sections.

Formative Assessments

- Self-Assessments/Student Friendly Scales
- White-board responses
- Exit Tickets
- Math Talks
- Participation
- Teacher Observation
- IXL

Summative Assessments

- Benchmark Assessment/SGO Assessment

RESOURCES (Instructional, Supplemental, Intervention Materials)

Everday Counts Calendar Math Grade K

IXL

Everday Mathematics Resources and Grade K Lessons:

5.6

5.8

7.3

8.6

8.13

INTERDISCIPLINARY CONNECTIONS

- Technology/Multimedia: Educational Tech Applications
- Career Readiness: Utilize Critical Thinking to Make Sense of Problems and Persevere

in Solving Them

- English/Language Arts: Literacy suggestions:
 - Meet the Teens
 - One Hundred Hungry Ants
 - Centipede's One Hundred Shoes
 - One Hundred Is a Family
 - From One to One Hundred

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.

- modify activity
- simplify directions
- check-ins
- visuals
- manipulatives
- wait time
- additional time for tasks
- verbal responses
- illustrations