

GRADE 1 UNIT 1 – ADD AND SUBTRACT WITHIN 20

<p>Established Goals: Standards</p> <p><u>Numbers and Operations in Base Ten</u></p> <p>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.</p> <p>1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <p>1.NBT.B.2a 10 can be thought of as a bundle of ten ones - called a "ten."</p> <p>1.NBT.B.2b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p><u>Operations and Algebraic Thinking</u></p> <p>1.OA.B.3 Apply properties of operations as strategies to add and subtract.</p> <p>1.OA.B.4 Understand subtraction as an unknown-addend problem.</p> <p>1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>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 $6 + 6 + 1 = 12 + 1 = 13$).</p> <p><u>Mathematical Practice Standards</u></p>	Transfer	
	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> • Students will be able to add and subtract numbers within 20 in order to solve problems. • Students will be able to count, beginning at any number less than 100. 	
	Meaning	
	ENDURING UNDERSTANDING	ESSENTIAL QUESTIONS
	<ul style="list-style-type: none"> • Numbers are sequential • Addition problems can be solved by counting forward • Subtraction problems can be solved by counting backward • Two-digit numbers represent amounts of tens and ones 	<ul style="list-style-type: none"> • What is the relationship between addition and subtraction? • What strategies can be used to add and subtract? • How does understanding place value help you solve addition and subtraction problems?
	Acquisition	
	KNOWLEDGE	SKILLS
	<i>Students will know how to...</i>	<i>Students will be skilled at...</i>
	<ul style="list-style-type: none"> • Numbers can be added in any order • Strategy of counting forward to solve addition problems • Strategy of counting backwards to solve subtraction problems • Numbers are organized in groups of tens and ones 	<ul style="list-style-type: none"> • Count utilizing written or verbal numerals starting at any number less than 100. • Count forward and backward within any number from 20 to solve addition and subtraction problems.

<p>Makes sense of problems and perseveres in solving them</p> <p>Look for and make use of structure</p> <p>Reason abstractly and quantitatively</p> <p>Look for and express regularity in repeated</p>		
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Vocabulary	Instruction and Pacing (suggested order to teach)	
Addition, subtraction, number line, counting forward, counting backward, altogether, tens, ones, total, missing	PreTest	1 Day
	Math Routines/15 Math Routines/15 Minute Math	1 Week
	Counting and Representing numerals to 120	Entire Unit
	Reading, Writing Numbers	1 Week
	Strategies to Add	1 ½ Weeks
	Strategies to Subtract	1 ½ Weeks
	Part/Whole Relationships utilizing Ten Frames	1 Week
	Benchmark Testing & Reteaching	2 Weeks
Common Misconceptions	Proper Conceptions	
Students count objects incorrectly	Practice Counting various groups of objects and/or mark objects counted	
Students incorrectly write sums	Counting and checking the total in each group will give the correct sum	
A number sentence should have words	Number sentences are written with numbers and signs	
Number sentences written vertically are different	A number sentence can be written several ways	
Students make errors with addition sentences	Counting and/or acting out the number story helps to check answers	
In subtraction, students move the wrong number of counters	Counting objects and rechecking can make sure numbers are correct	
Students become confused with objects that are left and objects taken away	Cover the objects taken away to see what is left	

Resources

Common Core Standards, New Jersey Model Curriculum

Envisions Math Program Suggested Topics:

Topic 1 – Understanding Addition

Topic 2 Understanding Subtraction

Topic 3 Five and Ten Relationships

MANIPULATIVES & GRAPHIC ORGANIZERS – Two Sided Counters, Multilink Cubes, Part/Part Whole Mats, Communicator/Smart Pal Templates

<https://grade1commoncoremath.wikispaces.hcpss.org>

<http://illuminations.nctm.org>, <https://www.illustrativemathematics.org>

Recommendations for ELL Learners

Envisions Spanish Resources & Printable Resources

<http://www.njctl.org/courses/math/1st-grade/numbers-to-120/>

<http://www.njctl.org/courses/math/1st-grade/addition-to-20/>

<http://www.njctl.org/courses/math/1st-grade/subtraction-to-20/>

Differentiation and Accommodations

- Provide graphic organizers
- Provide additional examples and opportunities for additional problems for repetition
- Provide tutoring opportunities
- Provide retesting opportunities after remediation (up to teacher and district discretion)
- Teach for mastery not test
- Teaching concepts in different modalities
- Adjust pace and homework assignments

ELL Modifications

When solving word problems (ie Benchmark Task for SLO 4 Addition and Subtraction across 10), rather than solely reading, give students a printed copy so they can read along and highlight/circle numbers. Provide room for students to write number sentences and draw pictures on the same document.

- SLO 6 (Unknown Addends) Read the statements to the students and provide a number sentence frame for them to fill in the numbers. This could be done on a communicator. (For example: Ann added a number to 4 and got 9. What number did she add? $4 + \underline{\quad} = 9$)
- Use math manipulatives for all activities. (two color counters, multilink cubes, part part whole mats)
- Use part part whole mats and two color counters to highlight the commutative property of addition and the relationship between addition and subtraction.

	<ul style="list-style-type: none"> • Allow students to act out word problems, moving around room as necessary • Utilize Envision Spanish Version/Interactive Path
21st Century Skills	Critical Thinking, Creative Thinking, Collaborating, Communicating, and Technology Literacy
Instructional Strategies	<p>Fairfield Township School recognizes the importance of the varying methodologies that may be successfully employed by teachers within the classroom and, as a result, identifies a wide variety of possible instructional strategies that may be used effectively to support student achievement. These may include, but not be limited to, strategies that fall into categories identified by the Framework for Teaching by Charlotte Danielson:</p> <ul style="list-style-type: none"> • Communicating with students • Using questioning and discussion techniques • Engaging students in learning • Using assessment in instruction • Demonstrating Flexibility and Responsiveness
Interdisciplinary Connections	ELA, Science, and Technology

Performance Task

You are in charge of getting the apples from the cafeteria for your class. There are 13 students in the class now. The teacher says that 4 more students will be arriving later. You must figure out how many apples to get from the cafeteria. Draw a picture that shows how many apples you need altogether. Write a number sentence to show how many are needed.

The teacher has asked you to sharpen 18 pencils before lunch break. So far you have sharpened 12 pencils. How many pencils still need to be sharpened? Draw a picture to show how many are left to be sharpened. Write a number sentence to show how many pencils still need to be sharpened.

Rubric

3 point answer: Student is able to complete entire task correctly

2 point answer: Student is able to complete 2 of the 4 tasks correctly

1 point answer: Student is unable to complete 2 of the 4 tasks correctly

ASSESSMENTS

Suggested Formative Assessment

Problem of the Day

Lesson Quizzes

Exit Ticket

Anecdotal Records (Topic Observation Checklist)

Suggested Summative Assessment - Grade Level developed Unit/Envisions Topic Tests/ Ed Connect Tests/ State Unit Benchmark/Performance Task