

GRADE 2 UNIT 2 – UNDERSTAND THE MEANING AND APPLICATION OF ADDITION AND SUBTRACTION

<p>Established Goals:</p> <p>Standards</p> <p>Operations & Algebraic Thinking</p> <p>2.OA.3 Recognize that in groups of even numbers objects can be counted by 2s and that in groups of odd numbers objects will not pair up evenly.</p> <p>2.OA.3 Write an equation to illustrate that all even numbers can be formed from the addition of two equal addends.</p> <p>2.OA.2 Add and subtract fluently within ten using mental strategies (within 10).</p> <p>Number & Base Ten</p> <p>2.NBT.6 Add up to four two-digit numbers based on place value and properties of operations</p> <p>2.NBT.2 Count within 1000 by ones, 5s, 10s, and 100s beginning at any multiple of 1, 5, 10 or 100 (e.g., begin at 505 and skip count by 5 up to 605, or begin at 600 and skip count by 100 up to 1000)</p> <p>2.NBT.5 Use a variety of strategies (place value, properties of operation, and/or the relationship between addition and subtraction) to add and subtract within 50.</p>	Transfer	
	<p><i>Students will be able to:</i></p> <p>There is more than one algorithm or strategy to solve addition and subtraction problems and come up with the same answer.</p> <p>Understanding of numbers and place value can help with addition and subtraction of larger numbers</p>	
	Meaning	
	ENDURING UNDERSTANDING	ESSENTIAL QUESTIONS
	<p>10 Ones can be regrouped as 1 Ten</p> <p>Standard Algorithm for addition breaks numbers into simpler numbers.</p> <p>All sums and differences can be found using models or cubes</p> <p>Several strategies can be used to solve problems paper/pencil, mental math, manipulatives, number line or Hundreds Chart</p> <p>Numbers can be added in any order to come up with the same sum</p>	<p>Which strategy works best for me when solving larger addition and subtraction problems?</p> <p>How can estimation help me solve problems?</p> <p>Can knowing how to add and subtract correctly help me in the real world?</p> <p>How can place value or using place value blocks help me solve for addition and subtraction?</p>
	Acquisition	
	KNOWLEDGE	SKILLS
	<p><i>Students will know how to...</i></p> <p>Determine when to regroup numbers in order to add or subtract</p> <p>Understand place value models to show how to add and</p>	<p><i>Students will be skilled at...</i></p> <p>Adding Basic Facts</p> <p>Subtracting Basic Facts</p>

	<p>subtract larger numbers</p> <p>Manipulate place value blocks to show the regrouping process</p> <p>Estimate sums and differences to reflect on their work</p> <p>Understand the steps for the standard algorithm for addition and subtraction</p> <p>Determine the correct operation to solve word problems involving addition and subtraction</p> <p>Know when a number line can help to solve for addition and subtraction</p> <p>Utilize a Hundreds Chart to solve for Addition or Subtraction</p>	<p>Steps to Add/Sub. Algorithms</p> <p>Regrouping 10 ones to one ten</p> <p>Regrouping 1 ten into 10 ones</p> <p>Recording calculations correctly</p> <p>Recognizing Tens and Ones Place</p> <p>Use symbols correctly (+ - =)</p> <p>Use a number line to solve addition/subtraction</p> <p>Use a Hundreds Chart to solve for addition or subtraction</p>
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Vocabulary	Instruction and Pacing (suggested order to teach)	
Regroup, Tens, Ones, Hundreds, Add, Subtract, Mental Math, Number Line, Hundreds Chart	Addition and Subtraction without Regrouping	1 Week
	Strategies to Add/Subtract – Mental Math/Number Line/Hundreds Chart/Pencil Paper	1 Week
	Facts Strategies for Add/Sub of Basic Facts	1 Week
	Solving problems with Addition & Subtraction with regrouping	3 Weeks
	Benchmark Testing & Reteaching	2 Weeks
Resources		
<p>New Jersey Model Curriculum, Common Core Standards</p> <p>Envisions Math Program Suggested Topics:</p> <p>Topic 6 Mental Addition</p> <p>Topic 8 Adding Two Digit Numbers</p>		

Topic 9 Subtraction

MANIPULATIVES AND GRAPHIC ORGANIZERS FOR UNIT 2 – Two-Sided Counters, Place Value Blocks, Hundreds Chart, Number Lines, Templates for Communicators/Smart Pal Sleeves

<https://grade2commoncoremath.wikispaces.hcps.org/>

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

Additional Resources for ELL Learners

Envisions Spanish Version Digital Path & Printable Resources

<http://www.dreambox.com/teachertools> activities for interactive whiteboard, some available in Spanish

<http://www.mathinenglish.com/worksheetsnumbers.php> printables for place value, counting, ordering numbers

<http://www.toonuniversity.com/flash.asp?err=496&engine=5> interactive place value game, 3 levels available

<http://www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html> math fact practice

<http://www.njctl.org/courses/math/2nd-grade/facts/>

<http://www.njctl.org/courses/math/2nd-grade/place-value/>

<http://www.njctl.org/courses/math/2nd-grade/2-digit-addition-subtraction/>

<http://www.state.nj.us/education/modelcurriculum/math/ellscaffolding/2u2.pdf>

Math site for parents and Math from different countries <http://www.aaamaticas.com/>

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

Modifications for ELL Learners

- Assess/teach prerequisite skills
- When solving word problems (i.e. 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.
- Illustrated reference charts (i.e. number words, regrouping strategies, problem solving strategies)
- Student illustrated words walls for key math terms
- Use math manipulatives for all activities. (two color counters, multilink cubes, part part whole mats, base 10 blocks, place value mats, hundreds chart). Students should have ample practice with manipulatives prior to completing paper and pencil activities.
- Use sentence frames to help students talk about the place value of numbers. (Example: There are ___ hundreds ___ tens and ___ ones. My number is ____.)
- Allow students to act out word problems, moving around room as necessary. Teach a variety of strategies that students can use to problem solve.
- Utilize Envision Spanish Version/Interactive Path and Printable Resources

21st Century Skills

Critical Thinking, Creative Thinking, Collaborating, Communicating, and Technology Literacy

Instructional Strategies

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:

- 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

Common Misconceptions	Proper Conceptions
When objects are in 2 groups to see even or odd, students don't know what to do once the groups are divided	The group with one left over is odd and the group with none left over is even
When determining if a two digit number is even or odd, students compare the numbers in the tens place	Dividing the ones into two equal groups will help to determine if a multidigit number is even or odd
In word problems children have difficulty choosing the operation	Acting out or explaining the story and deciding if you are taking away from a group or putting two groups together helps to "see" the problem
Students have difficulty skip counting when starting at the beginning of a sequence	A hundreds chart and number lines can help to skip count by 2's, 5's and 10's
Students are not sure when to regroup	Using place value blocks and cubes can help us to see when to regroup
Students are not sure how to record the new numbers once they regroup	Connecting place value blocks and cubes show the connection to the written number
Students add or subtract in the tens column first	Steps to adding and subtracting 2 and 3 digit numbers start in the ones column
Students mix up tens and ones when counting place value blocks or visuals of tens and ones	Count and say out loud the tens first, then count the ones
Students place numbers the wrong spots on the place value charts	Reading and using labels on Place Value Charts help us organize numbers correctly
Dependency on clue words in story problems	Visualizing, acting out, or drawing the word problems help to "see" the problem.

Performance Task

A group of friends is sharing and collecting stickers. They got together to trade. This is how many each boy/girl collected so far.

- Who has the largest sticker collection?
- Who has the smallest sticker collection?
- What is the difference between the largest and the smallest sticker collections?
- If you have more stickers than Jamie and less than Thomas, how many could you have? (Answers will vary)
- Find the total number of stickers that Rico, Carla and Jamie have.
- How many more stickers does Rico need to have the same amount as Carmen?

Name	Number of Stickers
Rico	60
Carmen	92
Jamie	19
Thomas	64
Carla	37

RUBRIC – EACH ITEM/bullet IS WORTH ½ POINT FOR A TOTAL OF 3 POINTS

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