# 2 Math Unit 09: Strategies to Add 3-Digit Numbers

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 3**
Length: **12 days**
Status: **Published**

## Unit Overview

### Addition Strategies

Starting in Grade 2, students use different strategies to solve 2-digit addition problems, such as decomposing addends, adding partial sums, and adjusting addends. Students build on the understanding of these strategies in this unit to extend these techniques to 3-digit addition problems.

- Decompose Addends: Students break apart a number into its place values and rewrite the number as an addition expression. Students look at different ways to decompose addends.
- Partial Sums: Students use the decomposing strategy and then focus on adding hundreds to hundreds, tens to tens, and ones to ones to create partial sums. Then they add the sums together. Students recognize addition patterns when adding partial sums including ideas such as when adding hundreds to hundreds only the hundreds digit increases.
- Adjusting Addends: Students learn to adjust addends to make friendly numbers. They adjust both addends by the same amount to make a problem that can be solved more efficiently. Students compare the sums of both the original and adjusted expressions to see that the sum does not change as long as the adjustments are made correctly.
- Representations and Tools: Students have been introduced to many tools that can be used to represent and help solve addition problems. Students continue to use these tools to build their understanding of addition and solve more complex problems. This unit focuses on tools including base-ten blocks, open number lines, decomposition drawings, and adjustment arrows.

### What Students Are Learning

- Students use place value patterns to mentally add 10 or 100 to a 3-digit number.
- Students use place value to add 3-digit numbers with and without regrouping.
- Students use different strategies for adding 3-digit numbers and explain why they chose the strategy they used.

### Number Routines

- Build Fluency
- Find the Pattern, Make a Pattern
- Find the Missing Values
- About How Much?
- Notice & Wonder
- Is It Always True?
- Which Doesn't Belong?

## Standards

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| 2.NBT.B.7 | Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. |
| 2.NBT.B.8 | Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. |
| 2.NBT.B.9 | Explain why addition and subtraction strategies work, using place value and the properties of operations. |

## Materials

**Core Materials:**

**Reveal Math**

9.1 Use Mental Math to Add 10 or 100

9.2 Represent Addition with 3-Digit Numbers

9.3 Represent Addition with 3-Digit Numbers with Regrouping

9.4 Decompose Addends to Add 3-Digit Numbers

9.5 Decompose One Addend to Add 3-Digit Numbers

9.6 Adjust Addends to Add 3-Digit Numbers

9.7 Explain Addition Strategies

**Supplemental Materials:**

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

## Technology

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| DA | Data & Analysis |
| 8.1.2.DA.1 | Collect and present data, including climate change data, in various visual formats. |

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| 8.1.2.DA.3 | Identify and describe patterns in data visualizations. |
| 8.1.2.DA.4 | Make predictions based on data using charts or graphs. |
| 8.2.2.ED.2 | Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. |
| 8.2.2.ED.3 | Select and use appropriate tools and materials to build a product using the design process. |

## Assessment

**Formative Assessment**

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

**Summative Assessment**

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

## Accommodations & Modifications

**Special Education**

| Differentiated Instruction | | | |
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| **Accommodate Based on Students' Individual Needs: Strategies** | | | |
| **Time/General**<br>• Extra time for assigned tasks<br>• Adjust length of assignment<br>• Timeline with due dates for reports and projects<br>• Communication system between home and school<br>• Provide lecture notes/outline | **Processing**<br>• Extra response time<br>• Have students verbalize steps<br>• Repeat, clarify, or reword directions<br>• Mini-breaks between tasks<br>• Provide a warning for transitions<br>• Reading partners | **Comprehension**<br>• Precise step-by-step directions<br>• Short manageable tasks<br>• Brief and concrete directions<br>• Provide immediate feedback | **Recall**<br>• Teacher-made checklist<br>• Use visual graphic organizers<br>• Reference resources to promote independence<br>• Visual and verbal |

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| | | • Small group instruction<br>• Emphasize multi-sensory learning | reminders<br>• Graphic organizers |
| **Assistive Technology**<br>• Computer/whiteboard<br>• Tape recorder<br>• Spell-checker<br>• Audio-taped books | **Tests/Quizzes/Grading**<br>• Extended time<br>• Study guides<br>• Focused/chunked tests<br>• Read directions aloud | **Behavior/Attention**<br>• Consistent daily structured routine<br>• Simple and clear classroom rules<br>• Frequent feedback | **Organization**<br>• Individual daily planner<br>• Display a written agenda<br>• Note-taking assistance<br>• Color code materials |

**504**

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

**ELL**

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts

- Manipulatives
- Math Diagnosis & Intervention System

**At-risk of Failure**

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

**Gifted & Talented**

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

## Interdisciplinary Connections

**ELA:**

RI.2.10. Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.

**Science:**

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

## Career Readiness, Life Literacies & Key Skills

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| 9.1.2.CAP.1 | Make a list of different types of jobs and describe the skills associated with each job. |
| 9.1.2.CR.1 | Recognize ways to volunteer in the classroom, school and community. |
| 9.1.2.CAP.2 | Explain why employers are willing to pay individuals to work. |
| 9.4.2.CT | Critical Thinking and Problem-solving |
| 9.1.2. FI.1 | Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards). |

## Career Ready Practices

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    - **Stem in Action :**
    - **Stem Career: Automotive Engineer: Riley talks about her aspirations to be an automotive engineer.**
    - **Riley adds miles: Riley explains how she can add to figure out how many miles two cars have traveled.**

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.