3 Math Unit 02: Use Place Value to Fluently Add and Subtract within 1,000

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 1**
Length: **18 Days**
Status: **Published**

Unit Overview

Use Place Value to Fluently Add and Subtract within 1,000

In this unit, students extend their knowledge of place value to 3- and 4-digit numbers and apply this knowledge to adding and subtracting 3-digit numbers. Students use place value to form estimates of sums and differences by rounding and using compatible numbers. They will extend their understanding of addition properties by discovering the order or grouping of three addends does not change the sum. Students also identify even and odd addition patterns to help check whether a sum is accurate.

Students use their understanding of place value to learn strategies, such as decomposing and adjusting, and then apply these strategies to help add and subtract more fluently. They also use their understanding of addition and subtraction to solve two-step word problems.

Students will extend their understanding of place value, addition, and subtraction learned in previous grades. These include:

- **Place value**: Students represent 3- and 4-digit number using standard form, expanded form, and word form.
- **Round multi-digit numbers**: Students round multi-digit numbers to the nearest 10 and nearest 100.
- **Addition**: Students use additional properties and strategies to add 3-digit numbers.
- **Subtraction**: Students use strategies to subtract 3-digit numbers

What Students Are Learning

- **Place-Value Structure** - Students extend their understanding of place value through thousands.
- **Addition** - Students add within 1,000 using properties of addition and addition strategies.
- **Subtraction** - Students use strategies to subtract within 1,000.

Number Routines

- Find the Pattern, Make a Pattern
- Mystery Number
- Decompose It
- Where Does It Go?
- Would You Rather?
- Notice & Wonder
- Numberless Word Problem
- Is It Always True?
- Which Doesn't Belong?

Standards

3.OA.D.8	Solve two-step word problems, including problems involving money, using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations.
3.NBT.A.1	Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NBT.A.2	With accuracy and efficiency, add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Materials

Core Materials:

Reveal Math

2.1 Represent 4-Digit Numbers

2.2 Round Multi-Digit Numbers

2.3 Estimate Sums and Differences

2.4 Use Addition Properties to Add

2.5 Addition Patterns

2.6 Use Partial Sums to Add

2.7 Decompose to Subtract

2.8 Adjust Numbers to Add or Subtract

2.9 Use Addition to Subtract

2.10 Fluently Add within 1,000

2.11 Fluently Subtract within 1,000

2.12 Solve Two-Step Problems Involving Addition and Subtraction

Supplemental Materials:

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

- Online Resources

Technology

DA	Data & Analysis
	Data can be organized, displayed, and presented to highlight relationships.
8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
	Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.
8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.
8.2.5.ED.2	Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
8.2.5.ED.3	Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.

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

Accommodate Based on Students Individual Needs: Strategies			
Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual daily planner • Display a written agenda • Note-taking assistance • 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

3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
RL.CR.3.1	Ask and answer questions and make relevant connections to demonstrate understanding

	of a literary text, referring explicitly to textual evidence as the basis for the answers.
RI.TS.3.4	Utilize and reference features of a text when writing or speaking about a text, using text features (e.g., graphics, images, captions, headings) and search tools (e.g., key words, sidebars, hyperlinks) to locate and integrate information relevant to a given topic efficiently.
W.IW.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Career Readiness, Life Literacies & Key Skills

9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
	Money comes in different values, forms, and uses.
9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
9.4.5.CT	Critical Thinking and Problem-solving
	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
9.1.5.FI	Financial Institutions
	People can choose to save money in many places such as home in a piggy bank, bank, or credit union.
9.1.5.FI.1	Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.
9.1.5.PB.1	Develop a personal budget and explain how it reflects spending, saving, and charitable contributions.

Career Ready Practices

STEM in Action

STEM Career: Pastry Chef: Saffron talks about the work of a pastry chef.

Saffron Measures Fruit: Saffron needs to add up the mass of fruit.

- 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.