

# Unit 2: Place Value Strategies for Addition and Subtraction

Content Area: **Mathematics**  
Course(s):  
Time Period: **Generic Time Period**  
Length: **6 weeks**  
Status: **Published**

## Standards

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LA.2.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed through self-reflection, revising and editing.
MA.2.2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.
LA.2.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.2.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
MA.2.2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s.
LA.2.L.2.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
MA.2.2.OA.B	Add and subtract within 20.
MA.2.2.G.A.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
MA.2.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.2.NBT.B	Use place value understanding and properties of operations to add and subtract.
MA.2.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
MA.2.2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
MA.2.2.OA.C	Work with equal groups of objects to gain foundations for multiplication.
LA.2.RF.2.4	Read with sufficient accuracy and fluency to support comprehension.
MA.2.2.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.
LA.2.RF.2.3	Know and apply grade-level phonics and word analysis skills in decoding words.
MA.2.2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.
LA.2.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
MA.2.2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
MA.2.2.OA.C.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
LA.2.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.
MA.2.2.OA.A	Represent and solve problems involving addition and subtraction.
TECH.8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
TECH.8.1.2.A.CS1	Understand and use technology systems.

## Essential Questions

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**Chapter 3 Essential Question:** How can you use patterns and strategies to find sums and differences for basic facts?

Lesson 3.1 Essential Question: How can you use doubles facts to find sums for near doubles facts?

Lesson 3.2 Essential Question: What are some ways to remember sums?

Lesson 3.3 Essential Question: How is the make a ten strategy used to find sums?

Lesson 3.4 Essential Question: How do you add three numbers?

Lesson 3.5 Essential Question: How are addition and subtraction related?

Lesson 3.6 Essential Question: What are some ways to remember differences?

Lesson 3.7 Essential Question: How does getting to 10 in subtraction help when finding differences?

Lesson 3.8 Essential Question: How are bar models used to show addition and subtraction problems?

Lesson 3.9 Essential Question: How are number sentences used to show addition and subtraction situations?

Lesson 3.10 Essential Question: How can acting it out help when solving a problem about equal groups?

Lesson 3.11 Essential Question: How can you write an addition sentence for problems with equal groups?

**Chapter 4 Essential Question:** How do you use place value to add 2-digit numbers, and what are some different ways to add 2-digit numbers?

Lesson 4.1 Essential Question: How does breaking apart a number make it easier to add?

Lesson 4.2 Essential Question: How can you make an addend a ten to help solve an addition problem?

Lesson 4.3 Essential Question: How do you break apart addends to add tens and then add ones?

Lesson 4.4 Essential Question: When do you regroup in addition?

Lesson 4.5 Essential Question: How do you record 2-digit addition?

Lesson 4.6 Essential Question: How do you record the steps when adding 2-digit numbers?

Lesson 4.7 Essential Question: How do you record the steps when adding 2-digit numbers?

Lesson 4.8 Essential Question: What are two different ways to write addition problems?

Lesson 4.9 Essential Question: How can drawing a diagram help when solving addition problems?

Lesson 4.10 Essential Question: How do you write a number sentence to represent a problem?

Lesson 4.11 Essential Question: What are some ways to add 3 numbers?

Lesson 4.12 Essential Question: What are some ways to add 4 numbers?

**Chapter 5 Essential Question:** How do you use place value to subtract 2-digit numbers with and without regrouping?

Lesson 5.1 Essential Question: How does breaking apart a number make subtracting easier?

Lesson 5.2 Essential Question: How does breaking apart a number make subtracting easier?

Lesson 5.3 Essential Question: When do you regroup in subtraction?

Lesson 5.4 Essential Question: How do you record 2-digit subtraction?

Lesson 5.5 Essential Question: How do you record the steps when subtracting 2-digit numbers?

Lesson 5.6 Essential Question: How do you record the steps when subtracting 2-digit numbers?

Lesson 5.7 Essential Question: What are two different ways to write subtraction problems?

Lesson 5.8 Essential Question: How can you use addition to solve subtraction problems?

Lesson 5.9 Essential Question: How can drawing a diagram help when solving subtraction problems?

Lesson 5.10 Essential Question: How do you write a number sentence to represent a problem?

Lesson 5.11 Essential Question: How do you decide what steps to do to solve a problem?

**Chapter 6 Essential Question:** What are some strategies for adding and subtracting 3-digit numbers?

Lesson 6.1 Essential Question: How do you draw quick pictures to show adding 3-digit numbers?

Lesson 6.2 Essential Question: How do you break apart addends to add hundreds, tens, and then ones?

Lesson 6.3 Essential Question: When do you regroup ones in addition?

Lesson 6.4 Essential Question: When do you regroup tens in addition?

Lesson 6.5 Essential Question: How do you know when to regroup in addition?

Lesson 6.6 Essential Question: How can making a model help when solving subtraction problems?

Lesson 6.7 Essential Question: When do you regroup tens in subtraction?

Lesson 6.8 Essential Question: When do you regroup hundreds in subtraction?

Lesson 6.9 Essential Question: How do you know when to regroup in subtraction?

Lesson 6.10 Essential Question: How do you regroup when there are zeros in the number you start with?

## **Student Learning Objectives**

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### **Unit Focus:**

- Represent and solve problems involving addition and subtraction
- Add and subtract within 20
- Work with equal groups of objects to gain foundations for multiplication
- Reason with shapes and their attribute
- Use place value understanding and properties of operations to add and subtract

- Understand place value

**Critical Area:** Building fluency with addition and subtraction

### **Chapter 3:**

SWBAT use doubles facts as a strategy for finding sums for near doubles facts.

SWBAT recall sums for basic facts using properties and strategies.

SWBAT recall sums for addition facts using the make a ten strategy.

SWBAT find sums of three addends by applying the Commutative and Associative Properties of Addition.

SWBAT use the inverse relationship of addition and subtraction to recall basic facts.

SWBAT recall differences for basic facts using mental strategies.

SWBAT find differences on a number line to develop the mental strategy of decomposing to simplify facts.

SWBAT use bar models to represent a variety of addition and subtraction situations.

SWBAT write equations to represent and solve a variety of addition and subtraction situations.

SWBAT solve problems involving equal groups by using the strategy act it out.

SWBAT write equations using repeated addition to find the total number of objects in arrays.

### **Chapter 4:**

SWBAT find a sum by breaking apart a 1-digit addend to make a 2-digit addend a multiple of 10.

SWBAT use compensation to develop flexible thinking for 2-digit addition.

SWBAT apply place-value concepts when using a break-apart strategy for 2-digit addition.

SWBAT model 2-digit addition with regrouping.

SWBAT draw quick pictures and record 2-digit addition using the standard algorithm.

SWBAT record 2-digit addition using the standard algorithm.

SWBAT practice 2-digit addition with and without regrouping.

SWBAT rewrite horizontal addition problems vertically in the standard algorithm format.

SWBAT solve problems involving 2-digit addition using the strategy draw a diagram.

SWBAT represent addition situations with number sentences using a symbol for the unknown number.

SWBAT find sums of three 2-digit numbers.

SWBAT find sums of four 2-digit numbers.

## **Chapter 5:**

SWBAT break apart a 1-digit subtrahend to subtract it from a 2-digit number.

SWBAT break apart a 2-digit subtrahend to subtract it from a 2-digit number.

SWBAT model 2-digit subtraction with regrouping.

SWBAT draw quick pictures and record 2-digit subtraction using the standard algorithm.

SWBAT record 2-digit subtraction using the standard algorithm.

SWBAT practice 2-digit subtraction with and without regrouping.

SWBAT rewrite horizontal subtraction problems vertically in the standard algorithm format.

SWBAT use addition to find differences.

SWBAT solve problems involving 2-digit subtraction by using the strategy draw a diagram.

SWBAT represent subtraction situations with number sentences using a symbol for the unknown number.

SWBAT analyze word problems to determine what operations to use to solve multistep problems.

## **Chapter 6:**

SWBAT draw quick pictures to represent 3-digit addition.

SWBAT apply place value concepts when using a break apart strategy for 3-digit addition.

SWBAT record 3-digit addition using the standard algorithm with possible regrouping of ones.

SWBAT record 3-digit addition using the standard algorithm with possible regrouping of tens.

SWBAT record 3-digit addition using the standard algorithm with possible regrouping of both ones and tens.

SWBAT solve problems involving 3-digit subtraction by using the strategy make a model.

SWBAT record 3-digit subtraction using the standard algorithm with possible regrouping of tens.

SWBAT record 3-digit subtraction using the standard algorithm with possible regrouping of hundreds.

SWBAT record 3-digit subtraction using the standard algorithm with possible regrouping of both hundreds and tens.

SWBAT record subtraction using the standard algorithm when there are zeros in the minuend.

## **Materials**

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### **Print Resources:**

-Student Edition Chapter 3

-Student Edition Chapter 4

-Student Edition Chapter 5

-Student Edition Chapter 6

-Chapter 3 Resources

-Chapter 4 Resources

-Chapter 5 Resources

-Chapter 6 Resources

-Grab and Go Center Kit

-Practice and Homework in Student Edition (Lesson Check and Spiral Review for each lesson)

-Reteach and Enrich in the Chapter Resources

-Counters, Vocabulary cards

-Base-ten blocks

-Math Boards

## **Technology:**

- Interactive Student Edition
- Interactive Teacher Edition
- Personal Math Trainer
- Math on the Spot Videos
- HMH Mega Math
- Digital Management System
- Animated Math Models
- iTools
- Multimedia eGlossary
- Digital Assessments
- Professional Development Videos

Achieve the Core:

<http://achievethecore.org/page/2853/go-math-k-5-guidance-documents>

## **Activities**

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### **Addition and Subtraction**

**Unit Project:** A Bunch of Animals

**Vocabulary Reader:** All About Animals (Science connection/questions about animals)

### **Chapter Three: Basic Facts and Relationships**



Game: Caterpillar Chase

Vocabulary Game: Going to a Coral Reef

Lesson 1: Use Doubles Facts

Lesson 2: Practice Addition Facts

Lesson 3: Make a Ten to Add

Lesson 4: Add 3 Addends

Lesson 5: Relate Addition and Subtraction

Lesson 6: Practice Subtraction Facts

Mid-Chapter Checkpoint

Lesson 7: Use Ten to Subtract

Lesson 8: Use Drawings to Represent Problems

Lesson 9: Use Equations to Represent Problems

Lesson 10: Equal Groups

Lesson 11: Repeated Addition

#### **Chapter Four: 2-Digit Addition**

Game: What is the Sum?

Vocabulary Game: Matchup

Lesson 1: Break Apart Ones to Add

Lesson 2: Use Compensation

Lesson 3: Break Apart Addends as Tens and Ones

Lesson 4: Model Regrouping for Addition

Lesson 5: Model and Record 2-Digit Addition

Lesson 6: 2-Digit Addition

Lesson 7: Practice 2-Digit Addition

Mid-Chapter Checkpoint

Lesson 8: Rewrite 2-Digit Addition

Lesson 9: Addition

Lesson 10: Write Equations to Represent Addition

Lesson 11: Find Sums for 3 Addends

Lesson 12: Find Sums for 4 Addends

### **Chapter Five: 2-Digit Subtraction**

Game: Subtraction Search

Vocabulary Game: Bingo

Lesson 1: Break Apart Ones to Subtract

Lesson 2: Break Apart Numbers to Subtract

Lesson 3: Model Regrouping for Subtraction

Lesson 4: Model and Record 2-Digit Subtraction

Lesson 5: 2-Digit Subtraction

Lesson 6: Practice 2-Digit Subtraction

Mid-Chapter Checkpoint

Lesson 7: Rewrite 2-Digit Subtraction

Lesson 8: Add to Find Differences

Lesson 9: Subtraction

Lesson 10: Write Equations to Represent Subtraction

Lesson 11: Solve Multistep Problems

## **Chapter Six: 3-Digit Addition and Subtraction**

Game: 2-Digit Shuffle

Vocabulary Game: Picture It

Lesson 1: Draw to Represent 3-Digit Addition

Lesson 2: Break Apart 3-Digit Addends

Lesson 3: 3-Digit Addition: Regroup Ones

Lesson 4: 3-Digit Addition: Regroup Tens

Lesson 5: Addition: Regroup Ones and Tens

Mid-Chapter Checkpoint

Lesson 6: 3-Digit Subtraction

Lesson 7: 3-Digit Subtraction: Regroup Tens

Lesson 8: 3-Digit Subtraction: Regroup Hundreds

Lesson 9: Subtraction: Regroup Hundreds and Tens

Lesson 10: Regrouping with Zeros

### **Other Activities:**

[2.OA.B.2 Hitting the Target Number](#)

[2.OA.C.3 Red and Blue Tiles](#)

[2.OA.C.4 Counting Dots in Arrays](#)

[2.G.A.2 Partitioning a Rectangle into Unit Squares](#)

[2.NBT.B.6 Toll Bridge Puzzle](#)

[2.NBT.B.7 How Many Days Until Summer Vacation?](#)

[2.NBT.B.9 Peyton and Presley Discuss Addition](#)

## **Assessments**

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### **MAP Assessment**

- Show What You Know
- Share and Show Activities
- On Your Own Activities
- ThinkSmarter
- Math Journals
- Response to Essential Questions
- Practice and Homework Activities (Lesson Check and Spiral Review for each lesson)
- Diagnostic Interview Task
- Digital Personal Math Trainer
- Lesson Quick Check
- Mid-Point Chapter Checkpoint
- Chapter Review
- Chapter Test
- Performance Assessment Task

## **Fact Fluency**

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### **GO Math! Resources for Fluency:**

- Games (Student Edition)
- Fluency Standard Lessons (Student Edition)
- Fluency Builder (Teacher Edition)
- Strategies and Practice for Skills and Facts Fluency- Primary, GK-3

- Teacher Resource Book
- HMH Mega Math
- Personal Math Trainer: Standards Quizzes
- Animated Math Models

**Other Resources for Fluency:**

- Fastt Math
- Flash Cards

MA.2.2.OA.B.2

Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

MA.2.2.NBT.B.5

Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

**Accommodations and Modifications**

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Materials and Resources that provide opportunities to accommodate and modify include:

- Personal Math Trainer (adaptive and intervention system)
- Interactive Student Edition
- Leveled quizzes and tests
- Leveled performance tasks
- Grab & Go Differentiated Centers
- Intensive Intervention Resource
- Strategic Intervention Resource
- Reteach activities
- RTI tiered resources and activities
- Math on the Spot videos
- Fastt Math