

Unit 1: Place Value and Whole Number Operations

Content Area: **Template**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

UNIT RATIONALE

Understanding place value is a fundamental skill that students will need throughout mathematics, particularly in estimation, the algorithms for the four basic operations, and in reading and understanding numbers. Students will build upon prior knowledge of place value to realize the relationships between digits in multi digit numbers hold even as the number extends past millions. Students will reinforce and expand their understanding of place value beyond the first period; therefore, they will be ready to revisit the addition algorithm to add numbers and extend beyond 1,000 as well. The fluency of students will be tested as there are more individual calculations to make when dealing with greater numbers. Students will also have the additional challenge of assessing reasonableness when dealing with greater numbers, which will generally mean reasoning, doing mental math, and rounding numbers to the thousands place value and above.

ESSENTIAL QUESTIONS

Module 1: How do we read and write multi digit numbers in different ways and describe the values of digits in numbers?

Module 2: How do we add and subtract whole numbers using understanding of place value?

STANDARDS

NEW JERSEY STUDENT LEARNING STANDARDS: CONTENT AREA

MATH.4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
MATH.4.NBT.A.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
MATH.4.NBT.A.3	Use place value understanding to round multi-digit whole numbers to any place.
MATH.4.NBT.B.4	With accuracy and efficiency, add and subtract multi-digit whole numbers using the standard algorithm.
MATH.4.M.A.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

NEW JERSEY STUDENT LEARNING STANDARDS: CAREER READINESS, LIFE LITERACIES AND KEY SKILLS

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.

NEW JERSEY STUDENT LEARNING STANDARDS: COMPUTER SCIENCE AND DESIGN THINKING

CS.3-5.8.2.5.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.

INSTRUCTIONAL PLAN

MODULE 2

Module 2: Addition and Subtraction of Whole Numbers (4 Lessons)

LESSON 2.2

2.2 Subtract Whole Numbers and Assess Reasonableness

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to fluently add and subtract multi-digit whole numbers using the standard algorithm 4. NBT. B.4
Student Learning Strategies	Subtract numbers between 1, 000 and 1, 000, 000. Apply rounding strategies
Success Criteria	I can: Subtract whole numbers greater than 1, 000 using place value and a grid with regrouping
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none">• Test Prep P12, SE• Turn and Talk p 35-36, SE• Check for understanding p37, SE• Exit Ticket p34, TE

<p>Activities and Resources</p>	<p>Pre-Warm Up: Test Prep P12, SE Warm Up: Activate Prior Knowledge 35B, TE</p> <p>Mini Lesson: Spark Your Learning p35, SE</p> <p>Guided Practice: Build Understanding p36-37, SE Independent Practice: Own Your Own p38, SE Wrap up: Exit Ticket p38, TE Homework: P13, SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p35C, TE</p> <p>Materials: Base-ten blocks, place value charts- to hundred thousands</p>
<p>Suggested Modifications</p>	<p>See Suggested Modifications list.</p>

LESSON 2.3

2.3 Use Addition and Subtraction to Solve Comparison Problems

<p>Student Learning Intentions (SLI) WALT: (We are learning to...)</p>	<p>We are learning to fluently add and subtract multi-digit whole numbers using the standard algorithm 4. NBT. B.4</p>
<p>Student Learning Strategies</p>	<p>Bar models Determine to use addition or subtraction to solve comparison problems</p>
<p>Success Criteria</p>	<p>I can:</p> <ul style="list-style-type: none"> • Draw a bar model for a comparison problem • Write an equation and use addition or subtraction to find the unknown number in the bar model
<p>Formative Assessment (drives instructional decisions)</p>	<ul style="list-style-type: none"> • Turn and Talk p 39-40 , SE • Check for understanding p41, SE • Exit Ticket p42, TE

	<ul style="list-style-type: none"> • Test Prep P14, SE
Activities and Resources	<p>Pre-Warm Up: Test Prep P14, SE Warm Up: Activate Prior Knowledge p39B, TE Mini Lesson: Spark Your Learning p39, SE</p> <p>Guided Practice: Build Understanding p40, SE Independent Practice: Own Your Own p42, SE Wrap up: Exit Ticket p42, TE Homework: P15, SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p39C, TE</p> <p>Materials: place value charts- to hundred thousands</p>
Suggested Modifications	See Suggested Modifications list.

LESSON 2.1

2.1 Add Whole Numbers and Assess Reasonableness

Student Learning Intentions (SLI) WALT: (We are learning to...)	<p>We are learning to fluently add and subtract multi-digit whole numbers using the standard algorithm</p> <p>4. NBT. B.4</p>
Student Learning Strategies	<p>Adding whole numbers Regrouping Place Value</p>
Success Criteria	<p>I can:</p> <p>Add whole numbers greater than 1, 000 using place value and a grid with regrouping.</p>
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none"> • Turn and Talk p 31-32, SE • Check for understanding p33, SE

	<ul style="list-style-type: none"> • Exit Ticket p34, TE
Activities and Resources	<p>Warm Up: Activate Prior Knowledge p31B, TE</p> <p>Mini Lesson: Spark Your Learning p31, SE</p> <p>Guided Practice: Build Understanding p32-33, SE</p> <p>Independent Practice: Own Your Own p34</p> <p>Wrap up: Exit Ticket p34, TE</p> <p>Homework: P11 SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p31C, TE</p> <p>Materials: Base-ten blocks, place value charts- to hundred thousands</p>
Suggested Modifications	See Suggested Modifications list.

LESSON 2.4

2.4

Student Learning Intentions (SLI) WALT: (We are learning to...)	<p>Use formula to find the perimeter of a rectangle or to find an unknown side given the perimeter and the length of one side of the rectangle</p> <p>4. MD. A.3</p>
Student Learning Strategies	Learn and apply the perimeter formula.
Success Criteria	<p>I can:</p> <p>Apply the perimeter formula to find the perimeter of a rectangle</p>
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none"> • Turn and Talk p43-44 , SE • Check for understanding p44, SE • Exit Ticket p46, TE • Test Prep P16, SE

Activities and Resources	<p>Pre-Warm Up: Test Prep P16, SE Warm Up: Activate Prior Knowledge p43B, TE Mini Lesson: Spark Your Learning p43, SE Guided Practice: Step It Out p44, SE Independent Practice: Own Your Own p45-46, SE</p> <p>Wrap up: Exit Ticket p46, TE</p> <p>Homework: P17, SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p43B, TE</p>
Suggested Modifications	See Suggested Modifications list.

Module 2 Review/ Module Test A

Module 2 Review/ Module Test A

Student Learning Intentions (SLI) WALT: (We are learning to...)	Today we are showing what we understand from module 2.
Student Learning Strategies	Vocabulary review Understanding of concepts and skills from Module 2
Success Criteria	I can: Complete the assessment.
Formative Assessment (drives instructional decisions)	Test Prep P18, SE Module 2 Review p47-48 SE
Activities and Resources	Students complete Module 1 Review p47-48 Score based on scoring guide p48, TE Use Module review results to intervene based on table p48, TE Complete data driven instruction if needed p47, TE
Suggested Modifications	See Suggested Modifications list.

MODULE 1

Module 1: Place Value and Whole Numbers (5 lessons)

LESSON 1.1

Lesson 1: Understand Place Value Relationships

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 4. NBT. A.1
Student Learning Strategies	Use a place value chart to compare the values of different digits and justify the comparisons.
Success Criteria	<ul style="list-style-type: none">• Recognize when a number in the ones place is ten times the number to its right.• Describe the value of a digit• Comparing numbers• Recording numbers in a place value chart
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none">• Turn and Talks, p5/7, SE• Check Understanding, p8, SE• Exit Ticket, p1, TE
Activities and Resources	<p>Warm Up: Activate Prior Knowledge, p5B, TE Mini Lesson: Spark Your Learning, p5, SE Guided Practice: Build Understanding, p6-8, SE Independent Practice: On Your Own p9-10, SE Wrap up: Exit Ticket p1, TE Homework: P1, SE</p> <p>Materials: Base-ten blocks (large cubes, flats, longs small cubes)</p> <p>Plan for differentiated instruction: Small group</p>

	options (On Track, Almost There, and Ready for More) p5C, teacher manual
Suggested Modifications	See Suggested Modifications list.

LESSON 1.2

Lesson 1.2: Read and Write Numbers

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to read and write numbers using base-ten numerals, number names, and expanded form. 4.NBT. A.2
Student Learning Strategies	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
Success Criteria	I can: Read and write 6-digit numbers in standard form, word form, and expanded form.
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none"> • Test Prep P2, SE • Turn and Talks p11/12, SE • Check Understanding p13, SE • Exit Ticket p14, TE
Activities and Resources	<p>Pre-Warm Up: Test Prep P2, SE</p> <p>Warm Up: Activate Prior Knowledge, 11B, TE Mini Lesson: Spark Your Learning p11, SE Guided Practice: Build Understanding p12-13, SE Independent Practice: On Your Own p14, SE Wrap up: Exit Ticket p14, TE Homework: P3, SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p11C, TE Materials: place value charts</p>
Suggested Modifications	See Suggested Modifications list.

LESSON 1.3

Lesson 1.3: Regroup and Rename Numbers

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 4. NBT. A.1
Student Learning Strategies	Explain different ways to group multi-digit whole numbers to 1, 000, 000.
Success Criteria	I can: Regroup and rename multi-digit whole numbers
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none">• Test-Prep: P4, SE• Turn and Talks p, 15-17, SE• Check Understanding p17, SE• Exit Ticket p18, TE
Activities and Resources	<p>Pre- Warm Up: Test Prep P4, SE</p> <p>Warm Up: Activate prior knowledge p15B, TE Mini Lesson: Spark Your Learning p15, SE Guided Practice: Build Understanding p16-17, SE</p> <p>Independent Practice: On Your Own p18</p> <p>Wrap up: Exit Ticket p18, TE</p> <p>Homework: P5, SE</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p15C, TE</p> <p>Materials: base-ten blocks and place value chart</p>
Suggested Modifications	See Suggested Modifications list.

LESSON 1.4

1.4 Compare and Order Numbers

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to read and write numbers using base-ten numerals, number names, and expanded form. 4.NBT. A.2
Student Learning Strategies	<ul style="list-style-type: none">• Read and write multi-digit whole numbers using base ten numerals, number names, and expanded form.• Comparing two digit numbers based on meanings of the digits in each place.
Success Criteria	I can: <ul style="list-style-type: none">• Compare and order three numbers to the hundred thousands place.• Record and justify the comparisons.
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none">• Turn and Talks p19-21, SE• Check Understanding p21, SE• Exit Ticket p22, TE• Test Prep: P6, SE
Activities and Resources	Pre-Warm Up: Test Prep P6, SE Warm Up: Activate Prior Knowledge p19B, TE Mini Lesson: Spark Your Learning p19, SE Guided Practice: Build Understanding p20-21 Independent Practice: On Your Own, p22, SE Wrap up: Exit Ticket p 22, TE Homework: P7, SE Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p19C, TE

	Materials: place value charts
Suggested Modifications	See Suggested Modifications list.

LESSON 1.5

1.5 Use Place Value Understanding to Round Numbers

Student Learning Intentions (SLI) WALT: (We are learning to...)	We are learning to use place value understanding to round multi-digit whole numbers to any place. 4. NBT. A.3
Student Learning Strategies	Round whole numbers through 1,000,000
Success Criteria	I can: Use place value understanding to round whole numbers through 1,000,000 and estimate.
Formative Assessment (drives instructional decisions)	<ul style="list-style-type: none"> • Test Prep P8, SE • Turn and Talks p23-25, SE • Check Understanding p25, SE • Exit Ticket p26, TE
Activities and Resources	<p>Pre-Warm Up: Test Prep P8, SE Warm Up: Activate Prior Knowledge p23B, TE Mini Lesson: Spark Your Learning p23, SE Guided Practice: Build Understanding p24-25, SE Independent Practice: On Your Own p26, SE Wrap up: Exit Ticket p26, TE Homework: P9-10 , SE</p> <p>Materials: place value charts, number lines</p> <p>Plan for differentiated instruction: Small group options (On Track, Almost There, and Ready for More) p23C, TE</p>
Suggested Modifications	See Suggested Modifications list.

Review Module 1/ Module Test Form A

Review Module 1/ Module Test Form A

Student Learning Intentions (SLI) WALT: (We are learning to...)	Today we are showing what we understand from module 1
Student Learning Strategies	Vocabulary review Understanding of concepts and skills from Module 1
Success Criteria	I can: Complete the assessment.
Formative Assessment (drives instructional decisions)	Module 1 Review Module Test Form A
Activities and Resources	Students complete Module 1 Review p27-28 Score based on scoring guide p28, TE Use Module review results to intervene based on table p27, TE Complete data driven instruction if needed p28, TE
Suggested Modifications	See Suggested Modifications list.

REFLECTIONS

To support learning in this unit tools are available in the unit 1 folder focusing on place value and rounding.

INTERDISCIPLINARY CONNECTIONS: NEW JERSEY STUDENT LEARNING STANDARDS FOR ELA, SOCIAL STUDIES, SCIENCE AND/OR MATHEMATICS

LA.K-12.NJSLSA.R1

Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

LA.K-12.NJSLSA.R2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
LA.K-12.NJSLSA.R4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
LA.K-12.NJSLSA.W4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LA.K-12.NJSLSA.SL1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.