

TOWNSHIP OF UNION PUBLIC SCHOOLS



Grade 5 Mathematics

Adopted: September 4, 2020

Mission Statement

The mission of the Township of Union Public Schools is to build on the foundations of honesty, excellence, integrity, strong family, and community partnerships. We promote a supportive learning environment where every student is challenged, inspired, empowered, and respected as diverse learners. Through cultivation of students' intellectual curiosity, skills and knowledge, our students can achieve academically and socially, and contribute as responsible and productive citizens of our global community.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Unit I Module A

Unit Title: Mathematics – Operations on Decimals and Numerical Expressions – Unit 1 – Module A

Grade level: Grade 5

Timeframe: 5 weeks

Rationale

Grade 5 – Operations on Decimals and Numerical Expressions – Unit 1

A focus of the unit 1 is to understand place value to the thousandths place. This concept builds on students' grade 4 understandings of decimals to the hundredths place. After examining the quantitative relationships that exist between the digits in place value positions of a multi-digit number, learners apply their previous understandings of adding and subtracting to add and subtract decimals.

While learners read, write, and compare decimals to the thousandths place using base-ten numerals, number names, and expanded form, the focus of this unit is addition and subtraction of decimals to the hundredths place. The additional and supporting concepts and skills engage learners in analyzing the structure of numerical expressions. Learners evaluate and write numerical expressions with grouping symbols, write numerical expressions from a description, and interpret numerical expressions.

Essential Questions

- How does the value of a digit compare to its neighboring digits?
- What happens to the value of a digit as it moves to the left on a place value chart?
- What happens to the value of a digit as it moves to the right on a place value chart?
- How are whole numbers and decimals written, compared, ordered, and rounded?

Standards

Standards (Taught and Assessed):

5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

5.NBT.A.3 Read, write, and compare decimals to thousandths.

- a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
- b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

5.NBT.A.4 Use place value understanding to round decimals to any place.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21. Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
- 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.
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
<i>Standards Pre-Assessment</i>	Tiered Instruction - 3 levels Modifications per students' IEPs RTI

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
<p>5.NBT.A.1 – WALT recognize in a multi-digit number that a digit is 10 times the value of the digit to its right</p> <p>5.NBT.A.1 – WALT recognize in a multi-digit number that a digit is 1/10 the value of the digit to its left</p>	<p>Use place value blocks to represent the difference of 10 times and 1/10 of</p> <p>Use a place value chart to loop left (10 times) or right (1/10 of)</p> <p>Count the number of zeros in 10 times, 100 times, 1,000 times, etc tells you how many places to move to the left because the number is increasing. Similarly, the number of zeros in 110,1100,11,000, etc tells you how many place value positions to move to the right because the number is decreasing.</p>	<p>Exit Slips</p> <p>Standards Assessment</p> <p>Toolbox assessment</p> <p>GO Math standards assessment</p> <p>Place Value Digit Card Slide</p>	<p>Activity #1: Use base 10 blocks for students to make observations between the place value positions.</p> <ul style="list-style-type: none"> Recognize that each base 10 block represents a place value position. Identify the pattern/relationship that each place is 10 times larger when moving to the left and each place is 1/10 of the previous place when moving to the right. <p>Activity #2: Review place value chart Have students list out the value of each place value position from the thousands to the thousands and make observations of the relationships between the place value positions.</p> <ul style="list-style-type: none"> Lead discussion to focus on: moving to the left the value of the places are greater and moving to the right the value of the places are decreasing. Then use “loops”/“hops” to show every time you move a place to the 	<p>Modifications per students' IEP</p> <p>iReady Toolbox student-led activities</p> <p>RTI activities</p>

			<p>left, the places are getting 10 times larger each time. (So, if you hop 3 times to the left, the places are getting 1,000 times larger in value because $\times 10 \times 10 \times 10$)</p> <ul style="list-style-type: none"> • Similarly, every time you move a place to the right, the places are $1/10$ of the previous places causing the places to decrease. (So if you hop two places to the right, the number will be $1/100$ of the starting number in value because $1/10 \times 1/10$.) <p>Activity #3: Place Value Digit Card Slide- Have students create the digit card slide and move it to the right and left (depending on 10 times or $1/10$ of). Discuss what happens to the value of a specific digit.</p> <p>Activity #4: Place Value "Act It Out" - Have students arrange themselves in a place value chart taped on the group. Each student will hold up a card with a digit. Have the students move to the right and left (depending on 10 times or $1/10$ of) and discuss what happens to the value of a specific digit.</p> <p>Resources: Toolbox Unit 1 Lesson 1 Instruct-Interactive Tutorial - Understand Place Value Toolbox Unit 1 Lesson 1 Instruct - Ready Instruction Book Toolbox Unit 1 Lesson 1 Practice - Practice & Problem Solving Book Toolbox Tools for Instruction Teacher-led Activities - Tools for Instruction</p>
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<p>5.NBT.A.3a – WALT read decimals to thousandths using base-ten numerals, number names, and expanded form</p>	<p>Use a place value chart to place the digits of a number. Then, write the word form and expanded form of the number.</p>	<p>Exit Slips Standards Assessment Toolbox assessment GO Math standards assessment</p>	<p><u>On-level - Toolbox Unit 1 Lesson 1</u> <u>Student-led Activities</u> GoMath textbook</p> <p>Activity #1: Base Ten Blocks Have students create decimals using base ten blocks</p> <ul style="list-style-type: none"> • model the decimal and draw the model • verbalize what they have (& write down the word form) • tell the value of each digit (& write down the expanded form). • Rotate through creating/drawing, verbalizing/word form, and expanded form.) <p>Resources: <u>Toolbox Unit 1 Lesson 3 Instruct</u> <u>Interactive Tutorial - Read and Write Decimals</u> <u>Toolbox Unit 1 Lesson 3 Instruct - Ready Instruction Book</u> <u>Toolbox Unit 1 Lesson 3 Practice - Practice & Problem Solving Book</u> <u>Toolbox Unit 1 Lesson 3 Teacher-led Activities - Tools for Instruction</u> <u>On level - Toolbox Unit 1 Lesson 3 Student-led Activity - Decimal Number Forms</u> GoMath textbook <u>Khan Academy decimal place value</u></p>	<p>Modifications per students' IEP iReady Toolbox student-led activities RTI activities</p>
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<p>5.NBT.A.4 – WALT round decimals to any</p>	<p>Think of the two rounded options for a decimal (the decimal with the same digit that is to be rounded and the decimal</p>	<p>Exit Slips Standards</p>	<p>Activity #1: Use a number line to place a decimal. Have students make observations of how</p>	<p>Modifications per students' IEP</p>
<p>5.NBT.A.3b – WALT compare two decimals to thousandths based on place value understanding</p> <p>5.NBT.A.3b – WALT record comparisons of two decimals to thousandths using $>$, $<$ or $=$</p>	<p>Align decimals vertically and compare each digit from left to right.</p>	<p>Exit Slips Standards Assessment Toolbox assessment GO Math standards assessment</p>	<p><u>Lessons</u> IXL Grade 5 practice: <u>IXL G.1</u> <u>IXL G.3</u> <u>IXL G.5</u> <u>IXL G.16</u></p> <p>Activity #1: Use Base-ten blocks to represent two decimals. Have students make observations and discuss which decimal is greater.</p> <p>Activity #2: Use a place-value chart to align the digits of a given decimal below the correct place value positions. Then, place a second decimal below, placing each digit below the correct place value positions. Compare the corresponding digits from left to right to find which decimal is greater.</p> <p>Activity #3: Use a number line to plot two decimals. Discuss where the decimals are located in relation to which decimal is greater.</p> <p>Resources: <u>Toolbox Unit 1 Lesson 4 Teacher-led Activities - Tools for Instruction</u> Go Math textbook IXL Grade 5 practice <u>IXL G.9</u> <u>IXL G.9</u> <u>IXL G.10</u></p>	<p>Modifications per students' IEP iReady Toolbox student-led activities RTI activities</p>

<p>place using place value understanding</p>	<p>with the digit that is to be rounded increased by 1.) Then, look at the digit to the right of the digit to be rounded to determine whether to round up or round down.</p> <p>Look at the digit to the right of the place to be rounded and use “5 or above, give it a shove” and “4 or below, leave it alone”.</p>	<p>Assessment</p> <p>Toolbox assessment</p> <p>GO Math standards assessment</p>	<p>close the decimal is to the rounded options.</p> <p>Activity #2: Have students list two decimals that a given decimal falls between by focusing on the digit to be rounded. Discuss which of the two decimals would be the best answer for the given decimal to round to. Students may look at the digit to the right of the digit to be rounded to assist with rounding.</p> <p>Activity #3: Students can use Base-ten blocks to model a decimal. Then, the students can model the decimal when rounded down and model the decimal when rounded up. Students can then compare the model of the original decimal to the models of the two rounded options and discuss which decimal is the better choice to round to.</p> <p>Resources: <u>Toolbox Unit 1 Lesson 4 Instruct</u> <u>Interactive Tutorial - Round Decimals</u> <u>Toolbox Unit 1 Lesson 4 Instruct</u> <u>Interactive Tutorial - Practice: Round Decimals</u> <u>Toolbox Unit 1 Lesson 4 Instruct - Ready Instruction Book</u> <u>Toolbox Unit 1 Lesson 4 Practice - Practice & Problem Solving Book</u> <u>Toolbox Unit 1 Lesson 4 Teacher-led Activities - Tools for Instruction</u> <u>On Level - Toolbox Unit 1 Lesson 4 Student-led Activity - Use Comparing & Rounding Vocabulary</u> <u>On Level - Toolbox Unit 1 Lesson 4</u> </p>	<p>iReady Toolbox student-led activities</p> <p>RTI activities</p>
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			Student-led Activity - Round Decimal <u>Numbers</u> Go Math textbook IXL Grade 5 practice IXL G.7	
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Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.NBT.1 / 5.NBT.3a	Modifications per students' IEP

Benchmark Assessment 2

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.NBT.3b / 5.NBT.4	Modifications per students' IEP

Summative Assessments

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.NBT.1, 5.NBT.3, 5.NBT.4 standards assessment	Modifications per students' IEP

Interdisciplinary Connections

Interdisciplinary Connections	Modifications (ELL, Special Education, Gifted, At-risk of Failure; 504) and Reflections
Open-ended and Extended Constructed Responses - Students will be given real-world mathematical scenarios in which they have to analyze, solve, and provide written explanations to support their mathematical reasoning.	Modifications per students' IEP Tiered questions

Unit 1 Module B

Unit Title: Mathematics – Operations on Decimals and Numerical Expressions – Unit 1 – Module B

Grade level: Grade 5

Timeframe: 4 weeks

Rationale

Grade 5 – Operations on Decimals and Numerical Expressions – Unit 1

A focus of the unit 1 is to understand place value to the thousandths place. This concept builds on students' grade 4 understandings of decimals to the hundredths place. After examining the quantitative relationships that exist between the digits in place value positions of a multi-digit number, learners apply their previous understandings of adding and subtracting to add and subtract decimals.

While learners read, write, and compare decimals to the thousandths place using base-ten numerals, number names, and expanded form, the focus of this unit is addition and subtraction of decimals to the hundredths place. The additional and supporting concepts and skills engage learners in analyzing the structure of numerical expressions. Learners evaluate and write numerical expressions with grouping symbols, write numerical expressions from a description, and interpret numerical expressions.

Note: Double asterisks (**) indicate that the example(s) included within the New Jersey Student Learning Standard may be especially informative when considering the Student Learning Objective.

Essential Questions

- How do you add and subtract decimals?
- How can you use modeling to demonstrate adding and subtracting decimals?
- What is the “order of operations,” and why is it important?
- How do you solve numerical expressions using the “order of operations”?
- How can you write numerical expressions to represent calculations?

Standards

Standards (Taught and Assessed):

- 5.NBT.B.7** Add, subtract, multiply, and divide decimals to hundredths, 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 and explain the reasoning used.
- 5.OA.A.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.A.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.*

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.1 Recognize a problem and brainstorm ways to solve the problem individually or collaboratively.
- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
- 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.
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
<i>Standards Pre-Assessment</i>	Tiered Instruction - 3 levels Modifications per students' IEPs RTI

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted,
We are learning to/that				

				At-risk of Failure, 504) and Reflections
<p>5.NBT.B.7 – WALT add and subtract decimals to hundredths using concrete models or drawings</p> <p>5.NBT.B.7 – WALT add and subtract decimals to hundredths using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction</p> <p>5.NBT.B.7 – WALT relate the strategy to the concrete model or drawing, and explain the reasoning used</p>	<p>Draw a model of the decimal addends and combine them to find the sum. Regroup as needed.</p> <p>Draw a model of the minuend (original decimal). Then, cross out the quantity of the subtrahend (decimal you are taking away) and regroup as needed.</p> <p>Vertically stack the decimals according to each digit's place value position. Write in "place holder" zeros in empty place value positions. Then, add/subtract.</p>	<p>Exit Slips</p> <p>Standards Assessment</p> <p>Toolbox assessment</p> <p>GO Math standards assessment</p>	<p>Activity #1: Add/Subtract Decimals using Base Ten Blocks with regrouping as needed- Have students record/draw models of the base 10 blocks as they solve.</p> <p>Activity #2: Add/Subtract Decimals using a Place Value Chart- Have students stack the decimals vertically in a place value chart and then add/subtract.</p> <p>Activity #3: Add/Subtract Prices and Budget from a Menu-</p> <ul style="list-style-type: none"> • Have students add/subtract prices from a budget using multiple approaches, specifically focused on properties. • Have students present and discuss which approach would be most appropriate/easiest to solve each problem. <p>Resources: <u>Toolbox Unit 1 Lesson 7 Instruct - Interactive Tutorial - Add Decimals</u> <u>Toolbox Unit 1 Lesson 7 Instruct - Interactive Tutorial - Subtract Decimals</u> <u>Toolbox Unit 1 Lesson 7 Instruct - Ready Instruction Book</u> <u>Toolbox Unit 1 Lesson 7 Practice - Add & Subtract Decimals</u></p>	<p>Modifications per students' IEP</p> <p>iReady/ Toolbox student-led activities</p> <p>RTI activities</p>

<p>5.OA.A.1 – WALT evaluate numerical expressions with parentheses, brackets, and braces, including expressions containing fractions and decimals</p>	<p>Use “PEMDAS” or “GEMDAS” to solve numerical expressions. Cross out each letter of PEMDAS as each step is completed. Highlight or underline each part of the expression that is being solved at each step.</p> <p>When you have groups within groups, solve the smallest group first and work your way out to the largest group.</p>	<p>Exit Slips Standards Assessment</p>	<p>On Level - <u>Toolbox Unit 1 Lesson 7 Student-led Activity</u> GO Math textbook <u>Khan Academy Add Decimals lesson</u> <u>Khan Academy Subtract Decimals lesson</u> IXL Grade 5 lessons: IXL H.1 IXL H.2 IXL H.3 IXL H.4</p>	<p>Modifications per students’ IEP iReady Toolbox student-led activities RTI activities</p>
<p>5.OA.A.1 – WALT use parentheses, brackets, or braces to group parts of a numerical expression</p>	<p>When you have groups within groups, solve the smallest group first and work your way out to the largest group.</p>	<p>Standards Assessment</p>	<p>Activity #1: Provide students with PEMDAS or GEMDAS template, review the meaning of the acronym, & provide direct instruction examples.</p> <p>Activity #2: Order of Operations Song</p> <p>Activity #3: Order of Operations Bingo</p> <p>Resources: <u>Toolbox Unit 3 Lesson 19 Instruct - Interactive Tutorial - Numerical Expressions and Order of Operations</u> <u>On level - Toolbox Unit 3 Lesson 19 Student-led Activity - Less Than, Equal to, Greater Than</u> <u>On level - Toolbox Unit 3 Lesson 19 Student-led Activity - Make It True</u> GO Math textbook <u>Khan Academy Algebraic Thinking Lessons</u></p>	<p>Modifications per students’ IEP iReady Toolbox student-led activities RTI activities</p>

<p>5.OA.A.2 – WALT write simple numerical expressions from a description that record calculations with numbers</p> <p>5.OA.A.2 – WALT interpret numerical expressions to compare their values without evaluating them</p>	<p>Highlight keywords such as “each,” “every,” “times,” “more,” “less,” “spent,” “left over,” etc.</p>	<p>Exit Slips Standards Assessment Toolbox assessment GO Math standards assessment</p>	<p>IXL Grade 5 lessons: <u>IXL O.5</u> <u>IXL O.6</u> <u>IXL O</u></p> <p>Activity #1: With student suggestions, discuss/create a 5 column list of keywords in word problems that relate to the 4 operations (addition, subtraction, multiplication, and division). Also, discuss/list keywords that would elicit parentheses/grouping in a numerical expression.</p> <p>Activity #2: Using example word problems, aid students in highlighting/breaking down each step of the word problems in order to then show how it contributes to creating a numerical expression.</p> <p>Activity #3: Have students create their own word problems and the corresponding numerical expressions. Students can exchange word problems and try to come up with the correct numerical expressions.</p> <p>Resources: <u>Toolbox Unit 3 Lesson 19 Instruct - Interactive Tutorial - Write and Evaluate Expressions</u> <u>Toolbox Unit 3 Lesson 19 Instruct - Ready Instruction Book</u> <u>Toolbox Unit 3 Lesson 19 Practice & Problem Solving Book</u> <u>Toolbox Unit 3 Lesson 19 Teacher-led Activities - Tools for Instruction</u></p>	<p>Modifications per students’ IEP iReady/ Toolbox student-led activities RTI activities</p>
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			<p>On level - Toolbox Unit 3 Lesson 19 <u>Student-led Activity - Write a Numerical Expression</u></p> <p>On level - Toolbox Unit 3 Lesson 19 <u>Student-led Activity - Find the Expression</u></p> <p>GO Math textbook</p> <p>Khan Academy Algebraic Thinking lessons</p> <p>IXL Grade 5 lessons: <u>IXL O.3</u> <u>IXL O.4</u></p>	
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Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.NBT.7	Modifications per IEPs

Benchmark Assessment 2

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.OA.1, 5.OA.2	Modifications per IEPs

Summative Assessments (add rows as needed)

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5.NBT.7 assessment	Modifications per IEPs
5.OA.1 / 2 assessment	

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Interdisciplinary Connections

Interdisciplinary Connections	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Open-ended and Extended Constructed Responses - Students will be given real-world mathematical scenarios in which they have to analyze, solve, and provide written explanations to support their mathematical reasoning.	Modifications per students' IEP Tiered questions