

SD Common Core State Standards Disaggregated Math Template

Domain:	Numbers and Operations in Base Ten	Cluster:	Understand the place value system	Grade level:	5
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Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard In Following Year
4.NBT.1 Generalize place value understanding for multi-digit whole numbers. Use place value understanding and properties of operations to perform multi-digit math.	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represent 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.	None

Student Friendly Language:
<p>I can recognize that every time I multiply by 10, I add a zero to the end of the number.</p> <p>I can make a digit 10 times larger by moving it one place value to the left.</p> <p>I can make a digit 10 times smaller by moving it one place value to the right.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Place value in decimals • Place value in whole numbers • Place in multi digit numbers • Digit vs. number • Powers of 10 • Exponent • Place value • Fractional names of place value positions 	<p>Placement of a digit in our base 10 number system determines the value of that digit.</p> <p>The reason the magnitude of numbers</p> <p>Tens place is ten times as much as the ones place, and the ones place is 1/10 the size of the tens place...</p> <p>Multiples and Powers of 10.</p>	<p>Students will recognize that our number system is a base ten system.</p> <p>Recognize that moving a digit one place to the right or left will change it's value by 10.</p> <p>Use a model of one unit.</p> <p>Express understanding of place value using fractional language.</p>

Key Vocabulary:
<div style="display: flex; justify-content: space-between; padding: 5px;"> digit number place value exponent powers of 10 </div>

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
<p>Models or scale drawings (NASA)</p> <p>Calculating wages</p> <p>Calculate interest so we can</p> <p>Figure out how to best invest our money</p> <p>Future understanding of the Binary System</p> <p>Video game programmer</p> <p>Understanding of the decimal</p>

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Correlating Standard in Previous Year	Number Sequence & Standard Understand	Correlating Standard in Following Year
<p>4.NBT.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. <i>For example, recognize that $700 \div 10 = 70$ by applying concepts of place value and division.</i></p> <p>4.NBT.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.</p>	<p>5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10.</p>	

Know (Factual)	(Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> ● power of ten (each move of the decimal to the left) ● exponent ● power of ten ● product ● quotient ● placement 	<p>The decimal point represents the power of ten when it is moved within a number and is represented using an exponent</p> <p>Connecting the pattern of the numbers of zeros in the product when you multiply by the powers of 10.</p> <p>The exponent above the 10 indicates how many places the decimal point is moving.</p>	<p>model what a power of ten looks like</p> <p>explain the pattern when zeros are added or taken off</p> <p>explain what happens when the decimal point is moved to the right or left in a number</p> <p>use exponents to represent numbers in power of tens</p>

Student Friendly Language:
<p>I can explain patterns I found when multiplying by the power of 10.</p> <p>I can explain and relate how the decimal point moves when it is multiplied or divided by powers of ten.</p> <p>I can use exponents to show powers of ten.</p> <p>I can explain and compare the use of powers of ten and whole number exponents.</p>

Key Vocabulary:
<p><u>exponent</u> <u>power of ten</u> product quotient placement</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>This standard could be related to real-life by percentages off when shopping, using and converting the metric system (building items), and link to fractions (money, measurement).</p>

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4.NBT.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.	5.NBT.3 Read, write, and compare decimals to thousandths. 5.NBT.3a - Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. 5.NBT.3b - Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	

Student Friendly Language:
I can read base 10 numbers using decimals up to the thousandths place with number names and expanded notation. I can write base 10 numbers using decimals up to the thousandths place with number names and expanded notation. I can compare base 10 numbers using decimals up to the thousandths place.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> Decimal Base-ten system Place value/number names Expanded form Note: additional form not only $327 = 300 + 20 + 7$, but also $3 \times 100 + 2 \times 10 + 7$ <ul style="list-style-type: none"> Symbols: $<$, $=$, $>$ deeper sense of place value 	Decimals represent a fraction of a whole number. Each place has a different value. The equivalence of decimals Example: $32/100 = 0.30 + 0.02$ $30/100 + 2/100 = .320$ $3/10 + 2/100 = 3(1 \times 10) + 2(1 \times 100)$	Read decimals using fractional language. Write decimals using fractional form. Write decimals in expanded form using symbol notation. Compare decimals to thousandths using symbol notation. Relate decimals to common benchmark decimals (.50, 1.0)

Key Vocabulary:				
<u>base-ten system</u>	expanded form	<u>thousandths</u>	place value	digits vs. numbers
symbols $<$, $=$, $>$	compare	tenths	hundredths	order
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?				
Interpret decimals with money. Some examples include: estimating cost, purchasing, making change, gas prices, and figuring sales tax. Interpret decimals to understand real world events. Some examples include: sports averages, race times, and statistics.				

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4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	5.NBT.4 Use place value understanding to round decimals to any place	

Student Friendly Language:
<p>I can round decimals to any place.</p> <p>I can reason and explain the my answer when I round.</p> <p>I can use the benchmarks (0, 0.5, 1, 1.5) to round.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • place value • rounding 	<p>The value of a digit in our number system is determined by its place value position</p> <p>The ability to go beyond the standard algorithm of procedure for rounding.</p> <p>Place value and number sense.</p>	<p>Demonstrate rounding of decimal numbers.</p> <p>Explain the process of rounding decimals to any place value.</p> <p>Use benchmark decimals to round (0, 0.5, 1, 1.5)</p>

Key Vocabulary:
<p>tenths hundredths <u>thousandths</u> place value decimal rounding <u>base 10 system</u></p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Percentages</p> <p>Determine tax</p> <p>To be able to calculate cost while shopping.</p>

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Domain:	Number and Operations in Base Ten	Cluster:	Perform operations with multi-digit whole numbers and with decimals to hundredths	Grade level:	5
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Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
.4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations, illustrate and explain the calculation by using equations, rectangular arrays, and/or area models	CC.5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	N/A

Student Friendly Language:
I can multiply numbers with two or more digits in the traditional way.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Multiplication tables • Addition Facts • Properties of Operations • Standard Algorithm for multiplication • Definition of a multi-digit number 	using the standard algorithm with help them to multiply multi-digit numbers.	Multiply fluently multi-digit numbers Use the standard algorithm Solve word problems using multiplication Understand the relationship between addition and multiplication

Key Vocabulary:
Algorithm Multi-digit Whole Number Product Factor
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
To be able to figure out how many pieces of candy I need to bring to give each of my classmates 10 pieces of candy. To be able to figure out how much it will cost to fill my tank up with gas.

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Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models	CC.5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	6.NS.2 Fluently divide multi-digit numbers using the standard algorithm

Student Friendly Language:
<p>I can divide a multi-digit number by a two-digit number.</p> <p>I can show my work and explain how I got the answer through equations, rectangular array, and/or an area model.</p> <p>I can show how multiplication and division are related.</p> <p>I can check my work using multiplication.</p> <p>I can show how division is related to subtraction.</p> <p>I can use inverse operations.</p> <p>When problem solving I can apply concepts of a quotient, divisor and a dividend.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Division algorithm • Multiplication facts • Subtraction facts 	<p>There is a relationship between the properties of operations and solutions of division problems</p> <p>There are a variety of strategies used to divide numbers.</p> <p>Equations, rectangular arrays and area models can be used to find whole number quotients.</p> <p>There is a relationships between multiplication and division.</p>	<p>Use multiplication to check division (inverse operations).</p> <p>Find whole number quotients with multi-digit dividends and 2-digit divisors.</p> <p>Explain strategies used to find quotients.</p> <p>Illustrate and explain division by using equations, rectangular arrays or area models.</p>

Key Vocabulary:				
Dividends	Quotients	Divisor	Inverse operation	Whole
Number				
Rectangular array	Area model	Equations	Place Value	Algorithm
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?				
<p>Planning an event, Busses on a field trip, Crops in a field, Money, Allotment of funds (budgeting: jobs and personal), Any average (sports: baseball batting average, basketball shooting, football), Time management, lawn care, applying lawn fertilizer.</p>				

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Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays and/or area models.</p> <p>4.NF.6 Use decimal notation for fractions with denominators of 10 or 100</p>	<p>5.NBT.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.</p>	<p>6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>

Student Friendly Language:

I can add, subtract, multiply, and divide numbers with decimals.
 I can use drawings, models, and strategies to the hundredths to explain my thinking.

Know (Factual)	Understand (Conceptual) I want students to understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> ● Place value to hundredths ● Decimal Algorithms ● Decimal Point ● Decimals ● Properties of Operations 	<p>Multiple strategies may be used to perform operations with decimals to the hundredths.</p> <p>Multiplication is a series of addition problems and that division is a series of subtraction problems.</p> <p>Fractions and decimals are all parts of a whole and are two different ways of recording the same number.</p> <p>When multiplying decimals, placement of the decimal point in the product is determined by the placement of the decimal point within the factors.</p> <p>The placement of the decimal point in the quotient is determined by the placement of the decimal point within the divisor and dividend.</p> <p>When adding and subtracting decimals, the decimal point needs to align within the problem and the answer.</p>	<p>Use models, drawings, graph paper and other strategies to add, subtract, multiply, and divide decimals.</p> <p>Communicate what strategy was used in the expression or equation and justify why that strategy was appropriate.</p> <p>Read orally/write numbers with decimal points.</p>

Key Vocabulary:

Relationship Decimal Inverse Algorithms
 Properties of Operation (Commutative, Associative, Distributive, Identity, Zero)

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?

Real Life Survival/Career:
 To be able to count money
 To estimate how much money will be needed to purchase items
 To be able to make change
 To estimate how much money will be given back as change
 To convert decimals to fractions to see the amount of savings at a sale
 To account for information in a check book
 To bake/cook and calculate ingredient amounts

Scientific Life Skills:
 To determine the rainfall amounts over a period of time
 To measure weight

Sporting Events:
 To understand times in sporting events
 To read a stop watch
 To order the times of athletes, from least to greatest
 To calculate batting averages