## TN State Standards in Mathematics - Grade 4

## 4.NBT.A Generalize place value understanding for

 multi-digit whole numbers.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. For example, recognize that $700 \div$ $70=10$ by applying concepts of place value and division.
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.
3. Use place value understanding to round multi-digit whole numbers to any place.

## 4.NBT.B Use place value understanding and properties

 of operations to perform multi-digit arithmetic.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.
**NOTE: ${ }^{2}$ Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.
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.
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.

## -Common Core Sheets.com

## 4.OA.C5

-Engage New York
4.OA.C5: Module 5 Lesson 41

## -Investigations

4.OA.C5: Unit 8 Sessions 1.4, 1.5, 2.4, 2.5, 3.2-3.6;

Unit 9 Sessions 2.1-2.8, 3.1-3.3, 3.5

## 4.NBT.A 1-3

## - EnVision Topics

1-1, 1-2, 1-3, 1-4
Transitions to CC: Lessons 1-3A

## -Illustrative Mathematics

4.NBT

Ordering 4-digit Numbers
To Regroup of Not to Regroup

## -K-5 Math Teaching Resources

4.NBT. 1

Place Value Problems
4.NBT. 2

Numeral, Word, and Expanded Form
Place Value Triangle
4.NBT. 3

Round to the Nearest Ten
Round to the Nearest Hundred
-Common Core Sheets.com
4.NBT,A1
4.NBT.A2
4.NBT.A3

## -Engage New York

4.NBT.A1: Module 1 Lessons 1-4, 11-19, Module 3

Lessons 4-11, 26-33
4.NBT.A2: Module 1 Lessons 1-6, 11-19
4.NBT.A3: Module 1 Lessons 7-10

## -Investigations

4.4.NBT.A1: Unit 5 Sessions 1.1, 3.1, 3.2, 3.6A
4.4.NBT.A2: Unit 5 Sessions 1.1-1.6, 1.5A, 2.1, 2.4-2.6,
3.1-3.6A, 4.1-4.6,
4.4A; Unit 6 Sessions 1.1-1.7; Unit 7 Sessions 3.5A, 3.5B
4.4.NBT.A3: Unit 5 Sessions 1.5A, 3.6A
${ }^{* *}$ NOTE: ${ }^{2}$ Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.

## 4.NBT.B 4-6

## ion Topics

2-1, 2-2, 2-4, 2-5, 2-6
Transitions to CC: Lesson 5-6A, 5-8A, 7-4A, 8-3A, 8-3B, 8-3C, 8-8A
-K-5 Math Teaching Resources
4.NBT. 4

Adding and Subtracting Multi-digit Numbers
-Common Core Sheets.com
4.NBT.B4
4.NBT.B5
4.NBT.B6
-Engage New York
4.NBT.B4: Module 1 Lessons 11-19
4.NBT.B5: Module 3 Lessons 4-13, 34-38
4.NBT.B6: Module 3 Lessons 14-21, 26-33

## -Investigations

4.NBT.B4: Unit 2 Sessions 1.1-1.3, 2.1, 2.2, 2.4-2.6, 3.5

Unit 4 Sessions 1.1-1.6, 2.1-2.6, 3.1-3.5, 4.1-4.7, 4.4A
4.NBT.B5: Unit 3 Sessions 1.1, 1.3-1.5, 3.1-3.4, 4.1-4.5;

Unit 8 Sessions 1.2-1.5, 2.1-2.5, 2.4A, 3.1, 3.4-3.6;
Unit 9 Sessions 2.1, 2.4-2.6, 2.8, 3.3, 3.4
4.NBT.B6: Unit 3 Sessions 2.1-2.6, 4.1;

Unit 8 Sessions 3.1-3.4, 3.5A, 3.6
Unit 9 Sessions 2.1, 2.2, 2.4-2.6, 2.8, 3.3, 3.4

## $2^{\text {nd }}$ Nine Weeks

## TN State Standards <br> 4.OA.B Gain familiarity with factors and multiples.

4. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range $1-100$ is a multiple of a given one-digit number. Determine whether a given whole number in the range $1-100$ is prime or composite.

## 4.NF.A Extend understanding of fraction equivalence and ordering.

1. Explain why a fraction $a / b$ is equivalent to a fraction $(\mathrm{n} \times \mathrm{a}) /(\mathrm{n} \times \mathrm{b})$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1 / 2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>,=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
${ }^{* *}$ NOTE: ${ }^{3}$ Grade 4 expectations in this domain are limited to fractions with denominators $2,3,4,5,6,8,10$, 12 , and 100.

## 4.NF.B Build fractions from unit fractions by applying

 and extending previous understandings of operations on whole numbers.3. Understand a fraction $\mathrm{a} / \mathrm{b}$ with $\mathrm{a}>1$ as a sum of fractions $1 / b$.

## Comments

* 4.OA.B4- this standard will not be tested until TN Ready Part 2. This standard is needed in order to understand the remaining standards in this 9 weeks.

Resources

### 4.0A.B4

-EnVision Topics
8-8; 8-9

## -Common Core Sheets.com

4.OA.B4
-Engage New York
4.OA.B4: Module 3 Lessons 22-25

## -Investigations

4.OA.B4: Unit 1 Sessions 1.1-1.5, 2.1-2.5, 3.1-3.4;

Unit 3 Sessions 1.4, 1.5, 2.1, 2.2, 3.1-3.4

## 4.NF.A 1-2

-EnVision
10-4, 10-5a, 10-5, 10-7, 10-8, 10-9
Transitions to CC: Lesson 10-5A,

## -TNCore Task

Papa's Pizza
12 Cookies
Star Bar
Getting to School

## -Illustrative Mathematics

Fractions and rectangles
Explaining fraction equivalence with pictures
http://www.illustrativemathematics.org/illustrations/743Lis ting fractions in increasing size
Doubling numerators and denominators
-Inside Mathematics
Picking Fractions

## -Tasks

Farmer Fred
Fraction activities and tasks
Cake Task

## -Common Core Sheets.com

4.NF.A1
4.NF.A2
a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $3 / 8=1 / 8+1 / 8+1 / 8 ; 3 / 8=1 / 8+$ $2 / 8 ; 21 / 8=1+1+1 / 8=8 / 8+8 / 8+1 / 8$.
${ }^{* *}$ NOTE: ${ }^{3}$ Grade 4 expectations in this domain are limited to fractions with denominators $2,3,4,5,6,8,10$, 12 , and 100.
4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
a. Understand a fraction $\mathrm{a} / \mathrm{b}$ as a multiple of $1 / \mathrm{b}$. For example, use a visual fraction model to represent $5 / 4$ as the product $5 \times(1 / 4)$, recording the conclusion by the equation $5 / 4=5 \times(1 / 4)$.
b. Understand a multiple of $a / b$ as a multiple of $1 / b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times(2 / 5)$ as $6 \times(1 / 5)$, recognizing this product as 6/5. (In general, $n \times(a / b)=(n \times a) / b$.)
c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3 / 8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?
**NOTE: ${ }^{3}$ Grade 4 expectations in this domain are limited to fractions with denominators $2,3,4,5,6,8$, 10,12 , and 100.

## 4.NF.C Understand decimal notation for fractions, and compare decimal fractions.

5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100 , and use this technique to add two fractions with respective

## -Engage New York

4.NF.A1: Module 5 Lessons 7-11, 16-26
4.NF.A2: Module 5 Lessons 12-15, 22-26

## -Investigations

4.NF.A1: Unit 6 Sessions 1.1, 1.5, 2.1, 2.3, 2.5, 2.6
4.NF.A2: Unit 6 Sessions 1.7, 2.1-2.6, 3.7

## 4.NF.B 3-4

## -EnVision Topics

10-1, 10-2, 11-1a, 11-1, 11-4, 11-5
Transitions to CC: Lesson 11-1A, 11-5A, 11-5B, 11-5C, 11-5D, 11-5E, 11-5F
-TNCore.org
Closer to 1
4.NF.B.3.a Papa's Pizza Task

Salty Pretzel
Chocolate Chips (

## -Illustrative Mathematics

4.NF

Comparing Sums of Unit Fractions
Making 22/17 in Different Ways
Comparing Two Different Pizzas
-Inside Mathematics
4.NF.B.3a Leapfrog Fractions

## -K-5 Math Teaching Resources

4.NF.B.3a

Adding and Subtracting Fractions
Adding Fractions Using Pattern Blocks
The Chocolate Bar Problem
Sense or Nonsense? \#1
Sense or Nonsense? \#2
4.NF.B.3b

Decomposing Fractions
Pizza Share

## -Common Core Sheets.com

4.NF.B3a
4.NF.B3b
4.NF.B3C
4.NF.B4a
4.NF.B4b
4.NF.B4c
denominators 10 and $100 .{ }^{4}$ For example, express $3 / 10$ as 30/100, and add $3 / 10+4 / 100=34 / 100$.
**NOTE: ${ }^{4}$ Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.
6. Use decimal notation for fractions with denominators 10 or 100 . For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ =, or <, and justify the conclusions, e.g., by using a visual model.
**NOTE: ${ }^{3}$ Grade 4 expectations in this domain are limited to fractions with denominators $2,3,4,5,6,8$, 10,12 , and 100.

## -Engage New York

4.NF.B3: Module 5 Lessons 1-11, 16-34
4.NF.B4: Module 5 Lessons 1-6, 22-26, 36-40

## -Investigations

4.NF.B3a: Unit 6 Sessions 1.1, 1.2, 1.5-1.7, 1.8A, 2.5
4.NF.B3b: Unit 6 Sessions 1.1, 1.2, 1.6
4.NF.B3c: Unit 6 Sessions 2.7A
4.NF.B3d: Unit 6 Sessions 1.3, 1.4, 1.8A
4.NF.B4a: Unit 6 Sessions 3A.1, 3A.2, 3A. 3
4.NF.B4b: Unit 6 Sessions 3A.1, 3A.2, 3A. 3
4.NF.B4c: Unit 6 Sessions 3A.1, 3A.2, 3A. 3

## 4.NF.C 5-7

-EnVision
1-7a, 11-4, 12-1, 12-2, 12-3, 12-4, 12-5, 12-5a, 12-6, 13-7 Transitions to CC: Lesson 12-5A

## -Illustrative Mathematics

Adding tenths and hundredths
Fraction equivalence
Expanded form

## -K-5 Math Teaching Resources

Sums of One
Measurement Problems
Conversion Word Problems

## -Howard County

4.NF.C. 6 activities
4.NF.C. 6 assessments
4.NF.C. 7 assessments

## -Georgia Unit Frameworks

4.NF.C.5, 4.NF.C.6, 4.NF.C. 7

Unit 5

## -Common Core Sheets.com

4.NF.C5
4.NF.C6
4.NF.C7
-Engage New York
4.NF.C5: Module 5 Lesson 41, Module 6 Lessons 4-8, 12, 15-16
4.NF.C6: Module 6 Lessons 1-8, 12, 15-16
4.NF.C7: Module 6 Lessons 4-11

|  |  | -Investigations |
| :--- | :--- | :--- |
|  |  |  |
| 4.NF.C5: Unit 6 Sessions 3.1, 3.3 |  |  |
| 4.NF.C6: Unit 6 Sessions 3.1-3.3 |  |  |
| 4.NF.C7: Unit 6 Sessions 3.1-3.7; Unit 7 Sessions 3.1, 3.2 |  |  |

## $3^{\text {rd }}$ Nine Weeks

| TN State Standards |
| :---: |
| 4.G.A- Draw and identify lines and angles, and classify | shapes by properties of their lines and angles.

1- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

2- Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

3- Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

## 4.MD.C- Geometric measurement: understand

 concepts of angle and measure angles.5- Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $1 / 360$ of a circle is called a "one.degree angle," and can be used to measure angles.
b. An angle that turns through one-degree angles is said to have an angle measure of $n$ degrees.

6- Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

## Comments

*Standards taught in $3^{\text {rd }} 9$ weeks are not tested until Part 2 of the TN Ready test.

* Include review time for Part 1 TN Ready testing


## Resources

4.G.A 1-3

EnVision
9-1, 9-2,
-Illustrative Mathematics
4.G.A. 1 Measuring Angles

## -Common Core Sheets.com

4.G.A1
4.G.A2

## -Engage New York

4.G.A1: Module 4 Lessons 1-4, 12-16
4.G.A2: Module 4 Lessons 12-16
4.G.A3: Module 4 Lessons 12-16

## -Investigations

4.G.A1: Unit 4 Sessions 2.1-2.5, 2.3A, 3.4A, 4.7
4.G.A2: Unit 4 Sessions 2.1, 2.3A, 2.3-2.5, 4.1-4.4, 4.7
4.G.A3: Unit 4 Sessions 4.1-4.4, 4.6

## 4.MD.C 5-7

-EnVision
9-3, 9-3a, 9-3b, 9-4a
Transitions to CC: Lesson 9-3A. 9-3B, 9-4A

## -Gheens Academy

4.MD. 5 Measuring Angles using a Protractor
4.MD. 5 Angles in Names
4.MD.5 Marshmallow Angles
4.MD. 5 Finding Angles in Pizza
4.MD. 6 Predicting and Measuring Angles
4.MD. 6 Angles in Triangles

## -Illustrative Mathematics

40A,MD Karl's Garden

## -Common Core Sheets.com

4.MD.C5a
4.MD.C6
4.MD.C7
-Engage New York
4.MD.C5: Module 4 Lessons 5-8
4.MD.C6: Module 4 Lessons 5-8

7- Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.
4.MD.C7: Module 4 Lessons 9-11

## -Investigations

4.MD.C5a: Unit 4 Sessions 2.3A, 3.4A
4.MD.C5b: Unit 4 Sessions 3.4A
4.MD.C6: Unit 4 Sessions 3.1-3.3, 3.4A
4.MD.C7: Unit 4 Sessions 3.1-3.3

## $4^{\text {th }}$ Nine Weeks

| TN State Standards | Comments | Resources |
| :---: | :---: | :---: |
| 4.MD.A- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. <br> 1- Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; $\mathrm{I}, \mathrm{ml} ; \mathrm{hr}, \mathrm{min}, \mathrm{sec}$. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two.- column table. For example, know that 1 ft is 12 times as long as 1 in . Express the length of a 4 ft snake as 48 in . Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), $(3,36), \ldots$ <br> 2- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. <br> 3- Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. <br> 4.MD.B- Represent and interpret data. <br> 4- Make a line plot to display a data set of measurements in fractions of a unit ( $1 / 2,1 / 4,1 / 8$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection. | * There are approximately 23 teaching days before the tentative first testing date for Part 2 of TN Ready. <br> * Include review time for Part 2 of TN Ready testing <br> *Engage New York: Module 7 practices converting forms of measurement and problem solving with measurement using multiplication strategies taught in the $1^{\text {st }} 9$ weeks. | 4.MD.A 1-3 <br> -EnVision <br> $16-1,16-3,16-4,16-5,16-6,16-7,16-8,16-9,14-1,14-2$, <br> 14-3, 14-6, 14-7, 14-8 <br> Transitions to CC: Lesson 1-7A, 14-7A, 16-12A <br> -Illustrative Mathematics <br> 40A,MD Karl's Garden <br> -Illustrative Mathematics <br> 4.MD. 1 <br> Who's the Tallest? <br> -Inside Mathematics <br> 4.MD. 1 <br> Movin and Groovin Level B and C <br> Once Upon a Time Level B <br> -K-5 Math Teaching Resources <br> 4.MD. 1 <br> Making a Kilogram <br> Estimating Weight <br> Measurement Conversion Word Problems <br> Measurement Concentrationhttp://www.k- <br> 5 mathteachingresources.com/support- <br> files/measurementconcentration4thgd.pdf <br> Metric Relationships <br> Capacity Creatures <br> -Common Core Sheets.com <br> 4.MD.A1 <br> 4.MD.A2 <br> 4.MD.A3 <br> -Engage New York <br> 4.MD.A1: Module 2 Lessons 1-5, Module 7 Lessons 1-14 <br> 4.MD.A2: Module 2 Lessons 1-5, Module 7 Lessons 1-14 <br> 4.MD.A3: Module 3 Lessons 1-3, 34-38 <br> -Investigations <br> 4.MD.A1: Unit 4 Sessions 1.1-1.5; Unit 7 Sessions 3.5A, 3.5B; <br> Unit 9 Sessions 3.1-3.3, 3.5 <br> 4.MD.A2: Unit 2 Sessions 1.2-1.5, 2.4, 2.5; Unit 4 Sessions 1.3, 1.5; |


|  |  | Unit 5 Sessions 1.4-1.6, 2.1-2.3, 3.4, 3.5, 4.5, 4.6; <br> Unit 6 Sessions 3.1, 3.4-3.6; Unit 7 Sessions 3.5B; <br> Unit 8 Sessions 2.1, 2.4A, 3.1, 3.5 <br> 4.MD.A3: Unit 4 Sessions 1.1, 1.3-1.5, 2.3, 4.1-4.7 <br> 4.MD.B 4 <br> -EnVision <br> 17-1, 17-2, 17-3, 17-5, 17-9, 17-10 <br> Transitions to CC: Lesson 17-4A <br> -Inside Mathematics <br> 4.MD.B. 4 Button Diameters <br> -Gheens Academy <br> 4.MD. 4 Objects In My Desk Line Plot <br> -Engage New York <br> 4.MD.B4: Module 5 Lessons 22-40 <br> -Investigations <br> 4.MD.B4: Unit 6 Sessions 2.7A; Unit 9 Sessions 3.1, 3.2 |
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