

Correspondence of WIDA English Language Development Standards and the Common Core State Standards for Mathematics

Introduction

What these documents are:

- These documents show correspondences between the WIDA (World-Class Instructional Design and Assessment) English Language Development Standards and the Common Core State Standards in mathematics.
- WIDA is a consortium of 30 states (including New Hampshire) and the District of Columbia that have all adopted the same English language development standards and assessments.

Format of the documents:

- The WIDA English Language Development Standards for mathematics consist of Model Performance Indicators (MPIs) at each of five different levels of language proficiency.
- Each MPI suggests a task that students at a particular level of language proficiency should be able to do to show achievement of a particular subject area standard.
- These documents consist of five WIDA-style MPIs (one for each of the five language proficiency levels) that correspond to selected Common Core State Standards.
- The model performance indicators were written by groups of New Hampshire ESOL and mainstream teachers through a federal Title III Professional Development grant to UNH Manchester.

Suggestions for using the documents:

- Mainstream teachers can use these documents to help understand what can be expected from ESOL students at various levels of language proficiency, and to guide the assessment of students' progress toward meeting Common Core State Standards in mathematics.
- ESOL teachers can use the alignments to help understand what ESOL students are expected to know in mathematics, and to guide the assessment of their progress toward meeting Common Core mathematics standards.

Important considerations:

- The documents are not curricula or programs of study; they are tools to be used in designing on-going classroom assessment of ESOL students.
- The MPIs are models that should be adapted as needed to meet individual teachers' and students' needs.
- Because the MPIs are geared to different levels of English language proficiency, it is essential to know students' proficiency levels (that information should be available in students' records or from their ESOL teacher).
- It is assumed that the knowledge and skills required to complete the tasks given in these MPIs have been previously taught, using teaching strategies appropriate for ESOL students.
- If WIDA MPIs are not included for a particular standard, or for a particular grade level, you can adapt related MPIs, or create new ones following the same model.

Grade 4 Model Performance Indicators that Correspond to the Common Core State Standards for Mathematics

Operations and Algebraic Thinking

Use the four operations with whole numbers to solve problems

CC.4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

Level 1 Entering	Choose the correct picture that corresponds to a multiplication equation.
Level 2 Emerging	Draw a picture to correspond to a multiplication equation.
Level 3 Developing	Discuss in a small group why a multiplication equation and its corresponding picture show the same representation.
Level 4 Expanding	Discuss in a small group why 5 times as many as 7 is the same as 7 times as many as 5.
Level 5 Bridging	Explain why 5 times as many as 7 is the same as 7 times as many as 5.

CC.4.OA.2 *Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.*

Level 1 Entering	Match number sentence cards showing multiplication and division problems involving multiplicative comparison with visual representations of the problems, with a partner.
Level 2 Emerging	Follow teacher's oral and visual prompts to solve multiplication and division problems involving multiplicative comparison, by using drawings and equations to represent the problem, with a partner.
Level 3 Developing	Follow teacher's written prompts to solve multiplication and division problems involving multiplicative comparison, by using drawing and equations to represent the problem, with a partner.
Level 4 Expanding	Write and solve multiplication and division word problems involving multiplicative comparison, in pairs; then exchange problems and solutions with another pair and compare answers.
Level 5 Bridging	Solve multiplication and division problems involving multiplicative comparison, using drawings and equations to represent the problem.

CC.4.OA.3 *Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.*

Level 1 Entering	Match number sentence cards showing multi-step problems involving all four operations with visual representations of the problems.
Level 2 Emerging	Solve multistep problems involving all four operations, using charts or manipulatives, and state the answer orally.
Level 3 Developing	Follow teacher's simple written prompts to solve multistep problems involving all four operations, and write equations to represent the problems.
Level 4 Expanding	Solve multistep word problems involving all four operations, in pairs, and write equations to represent the problems; then exchange problems and solutions with another pair and compare answers.
Level 5 Bridging	Solve multistep problems involving all four operations, write equations to represent the problems, and use estimation to check the reasonableness of the answers.

Gain familiarity with factors and multiples

CC.4.OA.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.*

(No WIDA MPIs developed.)

Generate and analyze patterns

CC.4.OA.5 *Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example: Given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

Level 1 Entering	Match a number or shape pattern in a sequence with the rule, with a partner.
Level 2 Emerging	Use a given rule to fill in blanks in an incomplete number or shape pattern, with a partner.
Level 3 Developing	Generate a number or shape pattern that follows a given rule, in a small group.
Level 4 Expanding	Generate a number or shape pattern that follows a given rule, individually; then compare patterns with a partner, and together discuss features of the pattern.
Level 5 Bridging	Generate a number or shape pattern that follows a given rule, identify features of the pattern, and explain those features to a partner.

Number and Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers

CC.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. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*

(No WIDA MPIs developed.)

CC.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.*

(These MPIs focus on reading and writing multi-digit whole numbers.)

Level 1 Entering	Match multi-digit whole numbers up to 99 with their numerical representation, their names, and their expanded forms, with a partner.
Level 2	Write number names for multi-digit whole numbers up to 999 from their

Emerging	numerical representations and their expanded forms.
Level 3 Developing	Write numerals for multi-digit whole numbers up to 9,999 from their number names, and from their expanded forms.,
Level 4 Expanding	Read and write multi-digit whole numbers up to 99,999 from their numerical representation, their names, and their expanded forms.
Level 5 Bridging	Read and write multi-digit whole numbers up to 999,999 from their numerical representation, their names, and their expanded forms.

(These MPIs focus on comparing two multi-digit whole numbers.)

Level 1 Entering	Match comparison symbols (e.g., $>$, $=$, $<$) with word cards showing <i>greater than</i> , <i>equals</i> , <i>less than</i> , with a partner.
Level 2 Emerging	Construct number sentences showing comparisons of two-digit numbers, using numeral cards 0 – 19 and symbol cards $>$, $=$, $<$, and read them aloud, with a partner.
Level 3 Developing	Describe the relative magnitude of two numbers up to 99, using terms such as <i>greater than</i> , <i>less than</i> , <i>equal to</i> , in a small group and with visual supports (e.g., number lines, hundred charts); then write the comparisons individually.
Level 4 Expanding	Compare numbers up to 99,999, using number lines and charts, with a partner; write the comparisons and read them aloud, using the terms <i>equal to</i> , <i>greater than</i> , <i>less than</i> .
Level 5 Bridging	Compare multi-digit numbers up to 999,999 by writing number sentences; explain how the meanings of the digits in each place are used to make comparisons.

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

Level 1 Entering	Locate on a number line the nearest ten, or the nearest hundred, to a given number; name the numbers located.
Level 2 Emerging	Locate on a number line the nearest ten, or the nearest hundred, to a given number; use short oral phrases to describe what was done.
Level 3 Developing	Construct a number line showing given numbers rounded to the nearest ten, or to the nearest hundred, in a small group.
Level 4 Expanding	Construct a number line showing given numbers rounded to the nearest ten, hundred, or thousand, with a partner.
Level 5 Bridging	Create a poster showing two given numbers, with one rounded up and the other rounded down; explain the rounding.

Use place value understanding and properties of operations to perform multi-digit arithmetic

CC.4. NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Level 1 Entering	Match number sentence cards showing problems involving addition or subtraction of whole numbers with visual representations of the problems.
Level 2 Emerging	Solve problems involving addition or subtraction of whole numbers, using charts or manipulatives, and state the answer orally.
Level 3 Developing	Follow teacher's written and illustrated prompts to solve problems involving addition or subtraction of whole numbers.

Level 4 Expanding	Solve problems involving addition or subtraction of whole numbers fluently, using the standard algorithm, with a partner.
Level 5 Bridging	Solve problems involving addition or subtraction of whole numbers fluently, and discuss in a small group the algorithm used.

CC.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.*

Level 1 Entering	Match number sentence cards showing problems involving multiplication with visual representations of the problems.
Level 2 Emerging	Solve problems involving multiplication, using charts or manipulatives, and state the answer orally.
Level 3 Developing	Follow teacher's written prompts to solve problems involving multiplication.
Level 4 Expanding	Solve problems involving multiplication, and illustrate the calculation using equations, arrays, or area models.
Level 5 Bridging	Solve problems involving multiplication, and explain the calculation using equations, arrays, or area models.

CC.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.*

Level 1 Entering	Match number sentence cards showing problems involving division with visual representations of the problems.
Level 2 Emerging	Solve problems involving division, using charts or manipulatives, and state the answer orally, with a partner.
Level 3 Developing	Solve problems involving division and illustrate their answers, in a small group.
Level 4 Expanding	Solve problems involving division, and illustrate the calculation using equations, arrays, or area models; then exchange problems with a partner and check the answers using multiplication.
Level 5 Bridging	Solve problems involving division, and explain the calculation using equations, arrays, or area models.

Number and Operations—Fractions

Extend understanding of fraction equivalence and ordering

CC.4.NF.1 *Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ 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.*

Level 1 Entering	Match equivalent fractions from a list of equivalent and non-equivalent fractions, using visual fraction models, with a partner; then record the equivalency (e.g., write $2/3 = 4/6$).
Level 2 Emerging	Match equivalent fractions, using visual fraction models, and say the names of the equivalent fractions (e.g., say <i>Two-thirds equals four sixths</i>), using a word bank.
Level 3 Developing	Generate equivalent fractions using visual fraction models, with a partner; then discuss why the number and size of the parts of equivalent fractions differ even though the fractions are the same size.
Level 4 Expanding	Discuss in a small group why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$, using visual fraction models; then individually generate equivalent fractions.
Level 5 Bridging	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$, using visual fraction models; then generate equivalent fractions.

CC.4.NF.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.*

Level 1 Entering	Compare fractions with different numerators and different denominators, using a number line or visual fraction models; then write the results of the comparisons using $>$, $=$, or $<$ symbols.
Level 2 Emerging	Compare fractions with different numerators and different denominators, using a number line or visual fraction models; then write the results of the comparisons using $>$, $=$, or $<$ symbols, and read the expressions aloud.
Level 3 Developing	Compare fractions with different numerators and different denominators by creating common denominators or numerators, in a small group; record the results and discuss them, using a visual fraction model.
Level 4 Expanding	Compare fractions with different numerators and different denominators by creating common denominators or numerators; record the results and explain them using a visual fraction model.
Level 5 Bridging	Compare fractions with different numerators and different denominators by comparing to a benchmark fraction; record the results and justify them using a visual fraction model.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers

CC.4.NF.3 *Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.*

(See MPIs for specific standards below.)

CC.4.NF.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

Level 1 Entering	Draw a visual representation of a given problem involving addition or subtraction of fractions with the same denominator, shading the parts that correspond to each fraction in the problem.
Level 2 Emerging	Draw and shade visual representations of given problems, as in Level 1; then describe what was done, with a partner, using a word bank.
Level 3 Developing	Depict visually, by drawing, using manipulatives, or acting out, addition and subtraction of fractions as joining and separating parts of the same whole.
Level 4 Expanding	Discuss in a small group why addition and subtraction of fractions are the same as joining and separating parts referring to the same whole.
Level 5 Bridging	Explain why addition and subtraction of fractions is the same as joining and separating parts referring to the same whole.

CC.4.NF.3b 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: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

Level 1 Entering	Match fraction cards with cards that show their various decompositions, with a partner.
Level 2 Emerging	Arrange fraction cards to show various decompositions of a fraction; write an equation for each decomposition on a white board, with a partner.
Level 3 Developing	Decompose a fraction into a sum of fractions with the same denominator; write an equation to show each decomposition, on a white board, and respond to teacher questions about the equations (e.g., Can you tell me the fractions you used?)
Level 4 Expanding	Decompose a fraction into a sum of fractions with the same denominator, in various ways, and write an equation to show each decomposition; discuss in a small group the justification for each decomposition.
Level 5 Bridging	Decompose a fraction into a sum of fractions with the same denominator, in various ways, and write an equation to show each decomposition; use a visual model to justify and orally explain each decomposition to a partner.

CC.4.NF.3c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

Level 1 Entering	Match mixed numbers with equivalent fractions, with a partner.
Level 2 Emerging	Match mixed numbers with equivalent fractions, with a partner; then write an equation (e.g., $1 \frac{1}{8} = 1 \frac{3}{8}$) and read it aloud.
Level 3 Developing	Add and subtract mixed numbers with like denominators, using equivalent fractions, with a partner.
Level 4 Expanding	Add and subtract mixed numbers with like denominators, using properties of operations; then discuss in a small group the steps used to find the sum or

	difference.
Level 5 Bridging	Add and subtract mixed numbers with like denominators, using properties of operations; then explain the steps used to find the sum or difference.

CC.4.NF.3d *Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.*

Level 1 Entering	Match very simple visually supported word problems involving addition and subtraction of fractions with like denominators, read aloud by the teacher, with the equations that represent the problems.
Level 2 Emerging	Read very simple, visually supported word problems involving addition and subtraction of fractions with like denominators; then match them with the equations that represent them and read the equations aloud.
Level 3 Developing	Solve word problems involving addition and subtraction of fractions with like denominators, using visual fraction models and equations, with a partner.
Level 4 Expanding	Solve word problems involving addition and subtraction of fractions with like denominators; discuss in a small group how the problems were solved, using visual fraction models and equations.
Level 5 Bridging	Solve word problems involving addition and subtraction of fractions with like denominators; explain how the problems were solved, using visual fraction models and equations.

CC.4.NF.4 *Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.*

(See MPIs for each specific standard below.)

CC.4.NF.4a *Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.*

(No WIDA MPIs developed.)

CC.4.NF.4b *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, $n \times (a/b) = (n \times a)/b$.)*

(No WIDA MPIs developed.)

CC.4.NF.4c *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 $\frac{3}{8}$ 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?

Level 1 Entering	Match cards showing visual fraction models depicting a problem involving multiplication of a fraction by a whole number with cards showing the corresponding equations, with a partner.
Level 2 Emerging	Match very simple visually supported word problems involving multiplication of a fraction by a whole number with cards showing the corresponding equations, with a partner.
Level 3 Developing	Solve word problems involving multiplication of a fraction by a whole number, by using visual fraction models, in a small group.
Level 4 Expanding	Solve word problems involving multiplication of a fraction by a whole number, by writing an equation to represent the problem, with a partner.
Level 5 Bridging	Solve word problems involving multiplication of a fraction by a whole number, by writing an equation to represent the problem, individually

Understand decimal notation for fractions, and compare decimal fractions

CC.4.NF.5 *Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.*

Level 1 Entering	Match cards showing fractions with denominators of 10 with cards showing equivalent fractions with denominators of 100, with a partner.
Level 2 Emerging	Follow simple oral prompts from the teacher to convert a fraction with a denominator of 10 into a fraction with a denominator of 100.
Level 3 Developing	Solve problems involving addition of fractions with denominators of 10 and fractions with denominators of 100, with a partner, by choosing cards from two piles (denominators of 10; denominators of 100) and adding them.
Level 4 Expanding	Convert a fraction with a denominator of 10 to a fraction with a denominator of 100, and use it to add another fraction with a denominator of 100, individually.
Level 5 Bridging	Explain how to convert a fraction with a denominator of 10 to a fraction with a denominator of 100, and use it to add another fraction with a denominator of 100.

CC.4.NF.6 *Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*

Level 1 Entering	Match cards showing decimals (tenths and hundredths) with cards showing the corresponding fractions, with a partner.
Level 2 Emerging	Match cards showing decimals (tenths and hundredths) with drawings of number lines showing their locations.
Level 3 Developing	Locate decimals (tenths and hundredths) on a number line, with a partner.
Level 4 Expanding	Locate decimals (tenths and hundredths) on a number line, individually.

Level 5 Bridging	Convert fractions with denominators of 10 or 100 to decimals (e.g., write 85/100 as 0.85), and locate the decimal on a number line.
---------------------	---

CC.4.NF.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.*

(No WIDA MPIs developed.)

Measurement and Data

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

CC.4.MD.1 *Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of 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),*

Level 1 Entering	Sort measurement units within a system of units from smallest to largest, with a partner.
Level 2 Emerging	Sort measurement units within a system of units from smallest to largest, with a partner, and identify how many of each smaller unit there are in each larger unit (e.g., 60 seconds in 1 minute; 60 minutes in 1 hour).
Level 3 Developing	Generate a conversion table for two measurement units within one system of units, in a small group.
Level 4 Expanding	Generate a conversion table for two measurement units within one system of units, and use it to solve problems involving conversion of measurements.
Level 5 Bridging	Write problems involving conversion of measurements; exchange problems with a partner and solve them using a conversion table; discuss any differences in answers.

CC.4.MD.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.

Level 1 Entering	Solve measurement conversion problems, given the formulas, and following the teacher's illustrated prompts (e.g., teacher shows a picture of a 12-inch ruler and a 36-inch yardstick and asks, <i>How many inches in 5 yards?</i>)
Level 2 Emerging	Solve very simple illustrated word problems involving measurement and conversion (e.g., <i>One jump rope = 3 yards of rope; I need 4 jump ropes. How many feet of rope do I need?</i>), read aloud by the teacher, using measurement scale diagrams.
Level 3 Developing	Convert measurements using formulas; state answers orally using technical vocabulary from a word bank (e.g., <i>units, inches, millimeters, kilometers</i>).
Level 4 Expanding	Solve measurement or conversion problems, stating the entire problem and its solution orally, including identifying the unit measurements in the problem, with a partner.
Level 5 Bridging	Create and solve a measurement and conversion problem (e.g., student writes a fact sentence involving a classroom object and converts it into a different unit of measurement within the same system).

CC.4.MD.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.

Level 1 Entering	Draw a diagram showing how to solve an area or perimeter problem, based on a picture of a real-world situation (e.g., how much carpet needed to carpet a room; how much fencing needed to fence in a yard).
Level 2 Emerging	Follow simple verbal prompts to write and solve area and perimeter problems, including drawing a shape with the proper unit measurements, and writing the formula.
Level 3 Developing	Solve area and perimeter problems, using the formulas, and state the answer orally, using technical vocabulary (e.g., <i>length, width, formula, area, perimeter, units</i>) from a word bank.
Level 4 Expanding	Describe the steps involved in solving area and perimeter problems, stating the entire problem, the formula, and the solution.
Level 5 Bridging	Write and solve a problem involving the area or perimeter of a shape, using the formula, with a partner; then exchange problems with another pair and compares answers.

Represent and interpret data

CC.4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). 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.

Level 1	Identify the greatest and least numbers on a line plot displaying measurements
---------	--

Entering	in fractions of a unit, in response to oral teacher prompts.
Level 2 Emerging	Identify the greatest and least numbers on a line plot displaying measurements in fractions of a unit, in response to oral teacher prompts, and find the difference between them by counting.
Level 3 Developing	Solve simple, visually supported problems involving addition and subtraction of fractions by making a line plot and using the information on it to solve the problem, with a partner.
Level 4 Expanding	Solve problems involving addition and subtraction of fractions by making a line plot and using the information on it to solve the problem, with a partner.
Level 5 Bridging	Write problems involving addition and subtraction of fractions by making a line plot and using the information presented on it to solve the problem; then exchange problems with a partner, solve them, and discuss any differences in answers.

Geometric measurement: understand concepts of angle and measure angles

CC.4.MD.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 n one-degree angles is said to have an angle measure of n degrees.*

Level 1 Entering	Match vocabulary cards showing <i>point, endpoint, common endpoint, ray, circle,</i> and <i>angle</i> with cards illustrating their meanings, with a partner.
Level 2 Emerging	Draw a <i>point, endpoint, common endpoint, ray, circle,</i> and <i>angle</i> in response to oral prompts.
Level 3 Developing	Label a drawing of an angle inside a circle with the words <i>point, endpoint, common endpoint, ray, circle,</i> and <i>angle</i> , using a word bank.
Level 4 Expanding	Discuss in a small group what a <i>one-degree angle</i> refers to, and how it can be used to measure angles.
Level 5 Bridging	Explain orally what a <i>one-degree angle</i> refers to, and how it can be used to measure angles.

CC.4.MD.6 *Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.*

Level 1 Entering	Follow the teacher's oral prompts to draw angles of a given measure.
Level 2 Emerging	Follow the teacher's oral prompts to measure angles in whole-number degrees using a protractor, and say what the measurement is.
Level 3 Developing	Measure angles in whole-number degrees using a protractor, and draw angles of a given measure, with a partner.
Level 4	Measure angles in whole-number degrees using a protractor, and draw angles

Expanding	of a given measure, independently.
Level 5 Bridging	Draw an angle to match the number of degrees on a card given by the teacher; then exchange papers with a partner, who will measure the angle; compare the partner's measurement with the original number, and discuss reasons for any differences.

CC.4.MD.7 *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.*

(No WIDA MPIs developed.)

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles

CC.4.G.1 *Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel line. Identify these in two-dimensional figures.*

Level 1 Entering	Match vocabulary cards showing <i>point, line, line segment, ray, right angle, acute angle, obtuse angle, perpendicular lines, and parallel lines</i> , read aloud by the teacher, with cards illustrating their meanings, with a partner.
Level 2 Emerging	Draw diagrams to illustrate <i>point, line, line segment, ray, right angle, acute angle, obtuse angle, perpendicular lines, and parallel lines</i> from oral prompts given by the teacher, with a partner.
Level 3 Developing	Label <i>point, line, line segment, ray, right angle, acute angle, obtuse angle, perpendicular lines, and parallel lines</i> on drawings of two-dimensional figures, using a word bank.
Level 4 Expanding	Label <i>point, line, line segment, ray, right angle, acute angle, obtuse angle, perpendicular lines, and parallel lines</i> on drawings of two-dimensional figures.
Level 5 Bridging	Draw <i>point, line, line segment, ray, right angle, acute angle, obtuse angle, perpendicular lines, and parallel lines</i> from written words, and identify them in two-dimensional figures.

CC.4.G.2 *Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of specified size. Recognize right triangles as a category, and identify right triangles.*

Level 1 Entering	Match properties of lines and angles (e.g., parallel lines, number of angles) with shapes, using a word bank and pictures of everyday objects.
Level 2 Emerging	Classify shapes according to their properties, using a multi-column table with headings such as <i>3 angles, 4 angles, 3 sides, 4 sides, equal sides, unequal sides, parallel sides</i> ; students draw pictures or place cutouts of shapes in the correct columns, in a small group.
Level 3 Developing	Identify shapes shown in a picture by their properties (e.g., number of angles, number of sides, length of sides, parallelism, perpendicularity), using a word bank.
Level 4 Expanding	Describe shapes to a partner, using their properties and a drawing of the shape (e.g., <i>A square has four equal sides and four right angles</i>).
Level 5 Bridging	Compare and contrast shapes using properties (e.g., <i>A ___ is similar to/different from a ___ because...</i>).

CC.4.G.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.*

Level 1 Entering	Draw lines of symmetry, using a ruler, onto line-symmetric two-dimensional figures.
Level 2 Emerging	Sort drawings of two-dimensional figures with lines across them into those that are line-symmetric and those that are not, with a partner.
Level 3 Developing	Discuss in a small group why some two-dimensional figures are line-symmetric and others are not.
Level 4 Expanding	Compare and contrast line-symmetric two-dimensional figures and non-line-symmetric two-dimensional figures, using a Venn diagram.
Level 5 Bridging	Explain what a line of symmetry is; identify line-symmetric figures and draw lines of symmetry on them.