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

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world mathematical problems

CC.7.RP.1 ***Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.*** **For example, If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{(1/2)}/_{(1/4)}$ miles per hour, equivalently 2 miles per hour.**

Level 1 Entering	Complete a rate table for the per unit rate when given various fractional values, with pictures.
Level 2 Emerging	Complete a rate table for the per unit rate when given various fractional values; then write a fraction algorithm, with a partner.
Level 3 Developing	Discuss in a small group how to compute a whole number unit rate when given ratios of fractions (e.g., *A worker completes 1/2 of a widget in 1 1/2 hours; what is the whole number unit rate?).*
Level 4 Expanding	Compute unit rates for time when given ratios of fractions for time traveled and distance traveled.
Level 5 Bridging	Compute unit rates for area given ratios of fractions for length and width.

CC.7.RP.2 ***Recognize and represent proportional relationships between quantities.***

(See MPIs for each specific standard below.)

CC.7.RP.2a ***Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.***

Level 1 Entering	Match cards showing ratios that are proportional, with a partner.
Level 2 Emerging	Sort cards showing ratios, tables, and graphs into proportional or not proportional relationships with a partner.
Level 3 Developing	Explain why two ratios are proportional, given a table of proportional relationships.
Level 4 Expanding	Discuss in a small group how to plot a ratio on a coordinate plane; then individually plot given ratios.
Level 5 Bridging	Summarize orally or in writing how to determine if two quantities are in a proportional relationship, with the aid of a graphic organizer.

CC.7.RP.2b ***Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.***

Level 1 Entering	Identify the unit rate in a table, with a partner.
Level 2 Emerging	Identify the unit rate in a graph, with a partner.
Level 3 Developing	Identify the unit rate in a diagram.
Level 4 Expanding	Identify the unit rate in an equation.
Level 5 Bridging	Identify the unit rate in a verbal description.

CC.7.RP.2c ***Represent proportional relationships by equations.*** **For example, if total cost *t* is proportional to the number *n* of items purchased at a constant price *p,* the relationship between the total cost and the number of items can be expressed as *t =pn*.**

Level 1 Entering	Label time, price, and number of items in proportional relationship equations; then match the equations to picture cards representing them.
Level 2 Emerging	Write equations to represent total cost for items and unit prices shown on picture cards (e.g., given a card showing 3 comic books and a unit price of $2.99, write the equation *3(2.99) = 8.97)*.
Level 3 Developing	Write equations to determine how many of an item can be bought with a given amount of money (e.g., given a play $20 bill and a picture card showing a bag of chips with a unit price of $5.00, write the equation *20/5 = 4.)*
Level 4	Discuss in a small group how a proportional relationship in an everyday

Expanding	situation can be represented by an equation (e.g., *a worker makes 15 widgets* (t) *in 3 hours* (n) *at a rate of 5 widgets per hour* (r); then individually write the equation *t = nr)*.
Level 5 Bridging	Write equations to represent proportional relationships in everyday situations (e.g., *a man earned $50* (t) *in 4 hours* (n)*; how much did he earn per hour (r)?* student writes *r = t/n); then* explain in writing what the symbols in the equation mean.

CC.7.RP2.d *Explain what a point* (x, y) *on the graph of a proportional relationship means in terms of the situation, with special attention to the points* (0, 0) *and* (1, r) *where* r *is the unit rate.*

Level 1 Entering	Match cards showing the terms of a specific proportional relationship (e.g., miles per hour, number of hours traveled, total number of miles) with the *x*-axis, the *y*-axis, and the (*x, y)* points on a graph representing the relationship, with a partner.
Level 2 Emerging	Match cards showing the terms of a specific proportional relationship (e.g., miles per hour, number of hours traveled, total number of miles) with the *x*-axis, the *y*-axis, and the (1, *r)* point, given a graph representing the relationship.
Level 3 Developing	Discuss in a small group a specific proportional relationship situation (e.g., speed in miles per hour, wages per hour), and what the points *x* and *y* mean on a graph, in terms of the specific situation.
Level 4 Expanding	Write sentences about a specific proportional relationship situation (e.g., speed in miles per hour, wages per hour), and what the points *x* and *y* mean on a given graph, in terms of the specific situation, with the support of model sentences or sentence frames.
Level 5 Bridging	Explain orally what the points *x* and *y* mean on a graph of a proportional relationship, in terms of a specific situation.

CC.7.RP.3 *Use proportional relationships to solve multistep ratio and percent problems.* **Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.**

Level 1 Entering	Match an illustrated ratio or percent problem with a set of sequenced number sentences that can be used to solve the problem, with a partner.
Level 2 Emerging	Sequence a set of number sentences for solving an illustrated ratio or percent problem (e.g., order the number sentences you would follow to discount or tax an item).
Level 3 Developing	Describe the procedure for solving a ratio or percent problem, (e.g., order the number sentences you would follow to discount or tax an item), using a flow chart.
Level 4 Expanding	Follow oral and/or written directions for solving problems that include real-world proportional relationships such as discounts, tax, tips or rates, and perform the steps needed to solve the problems, using word banks, manipulatives, visual representations (including graphs and/or ratio tables), or graphic organizers.
Level 5 Bridging	Explain the steps needed to solve a proportional reasoning problem and justify the answer in writing or orally, using word banks, a dictionary, and examples.

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers

CC.7.NS.1 ***Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.***

(See MPIs for each specific standard below.)

CC.7.NS.1a ***Describe situations in which opposite quantities combine to make 0.*** **For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.**

Level 1 Entering	Model an everyday situation in which opposite quantities make zero when they are combined (e.g., borrowing a certain sum of money and paying it all back), using manipulatives or real world objects.
Level 2 Emerging	Prepare and present a short skit, with simple dialogue, representing an everyday situation in which opposite quantities make zero when they are combined (e.g., earning a certain sum of money and spending it all).
Level 3 Developing	Discuss in a small group why opposite quantities make zero when they are combined, using everyday examples (e.g., hiking up a mountain and back down).
Level 4 Expanding	Explain, orally or in writing with details, why opposite quantities make zero when they are combined, using everyday examples (e.g., buying minutes on a mobile phone and using them); with the support of a word bank, model or pictures.
Level 5 Bridging	Write a description of a situation in which opposite quantities combine to make 0 (e.g., charging a credit card and paying the bill).

CC.7.NS.1b ***Understand*** **p + q** ***as the number located a distance*** **|q|** ***from*** **p***, in the positive or negative direction depending on whether* **q** ***is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.***

Level 1 Entering	Match addition number sentences using positive and negative numbers with drawings of number lines that correspond, with a partner.
Level 2 Emerging	Point to the opposite of a rational number on a number line, or model the opposite of a number with integer chips.
Level 3 Developing	Discuss how to find the sum of two integers given a real world problem (e.g. you owe your friend $15 and pay back $11, how much do you still owe?), using a word bank and a number line.
Level 4 Expanding	Write number sentences from oral descriptions of real world contexts that involve sums of integers, with the support of a word bank.
Level 5 Bridging	Explain why a number and its opposite have a sum of 0, and give real-world examples.

CC.7.NS.1c ***Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.***

Level 1 Entering	Match equivalent addition and subtraction number sentences, given examples.
Level 2 Emerging	Match subtraction number sentences using positive and negative numbers with drawings of number lines that correspond, with a partner..
Level 3 Developing	Follow oral directions to subtract rational numbers using a number line.
Level 4 Expanding	Discuss in a small group why subtracting rational numbers is equivalent to adding the additive inverse, using a number line or integer chips, given real-world examples.
Level 5 Bridging	Explain why the difference between two rational numbers on the number line is the absolute value of their difference, and give real-world examples.

CC.7.NS.1d ***Apply properties of operations as strategies to add and subtract rational numbers.***

(No WIDA MPIs developed.)

CC.7.NS.2 ***Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.***

(See MPIs for specific standards below.)

CC.7.NS.2a ***Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.***

(No WIDA MPIs developed.)

CC.7.NS.2b ***Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real- world contexts.***

(No WIDA MPIs developed.)

CC.7.NS.2c ***Apply properties of operations as strategies to multiply and divide rational numbers.***

(No WIDA MPIs developed.)

CC.7.NS.2d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

Level 1 Entering	Match rational numbers with their equivalent decimals.
Level 2 Emerging	Identify decimals as terminating or repeating, with a partner.
Level 3 Developing	Sequence steps for converting rational numbers to a decimal using given long division examples.
Level 4 Expanding	Explain the steps for converting a rational number to a decimal.
Level 5 Bridging	Explain in writing how to convert a rational number to a decimal using long division; and identify whether the converted decimal terminates in 0s or repeats.

CC.7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)

Level 1 Entering	Match key words in problems with the operations they indicate, with a partner. (e.g. *how many more, difference, sum, total, how many in each group,* etc.)
Level 2 Emerging	Identify key words in real-world problems involving the four operations with rational numbers, and match with an appropriate number sentence, with a partner.
Level 3 Developing	Write number sentences for real-world and mathematical problems involving the four operations with rational numbers, in small groups, with the support of a word bank.
Level 4 Expanding	Describe a real-world problem that corresponds to a given mathematical problem, and write a sentence explaining the answer.
Level 5 Bridging	Write word problems involving the four operations with rational numbers, based on real-world contexts, with a partner.

Expressions and Equations

Use properties of operations to generate equivalent expressions

CC.7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

(No WIDA MPIs developed.)

CC.7.EE.2 ***Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.*** **For example, a + 0.05*a* = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."**

(No WIDA MPIs developed.)

Solve real-life and mathematical problems using numerical and algebraic expressions and equations

CC.7.EE.3 ***Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.*** **For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.**

Level 1 Entering	Sort key words from problem situations with mathematical operation or other symbol (e.g., *+, –, %, $,* etc.)
Level 2 Emerging	Follow teacher's oral prompts to solve illustrated real-life problems, with a partner and a word bank.
Level 3 Developing	Solve problems using drawings, manipulatives, or charts.
Level 4 Expanding	Write word problems and their solutions, given numerical expressions, in pairs.
Level 5 Bridging	Explain steps to solve a problem and justify the answer in a small group discussion.

CC.7.EE.4 ***Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.***

(See MPIs for each specific standard below.)

CC.7.EE.4a ***Solve real-life and mathematical problems using numerical and algebraic expressions and equations: Solve word problems leading to equations of the*** **form px + q = r *and* p(x + q) = r*, where* p, q, *and* r *are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.*** **For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?**

Level 1 Entering	Match numerical and algebraic sentences in a variety of forms, with the support of examples.
Level 2 Emerging	Read algebraic expressions such as *px + q* aloud as *p times x plus q,* with the support of word banks and examples.
Level 3 Developing	Identify variables in a word problem, given the algebraic expression that matches the problem, with a partner.
Level 4 Expanding	Write algebraic and/or numerical expressions, given a word sentence.
Level 5 Bridging	Translate algebraic expressions and equations into word phrases and sentences.

CC.7.EE.4b ***Solve word problems leading to inequalities of the form* px + q > r *and* px + q < r*, where* p, q, *and* r *are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.* For example, as a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.**

Level 1 Entering	Match numerical and algebraic sentences in a variety of forms, with the support of examples.
Level 2 Emerging	Match algebraic expressions of inequalities with word sentences, with the support of word banks and examples.
Level 3 Developing	Sequence steps for graphing a solution to an inequality.
Level 4 Expanding	Describe solutions to inequalities orally, in the context of the problem, given graphs of the solution.
Level 5 Bridging	Explain in writing the solution to an inequality, given graphs of the inequality.

Geometry

Draw, construct, and describe geometrical figures and describe the relationships between them

CC.7.G.1 ***Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.***

Level 1 Entering	Follow simple oral directions to reproduce a scale drawing at a different scale, with a partner.
Level 2 Emerging	Follow simple written directions to reproduce a scale drawing at a different scale, with a partner, or compute actual lengths and areas from a scale drawing.
Level 3	Discuss in a small group how to reproduce a scale drawing at a different scale,

Developing	and how to compute actual lengths and areas from a scale drawing.
Level 4 Expanding	Explain orally the procedure for computing actual lengths and areas from a scale drawing, with a partner.
Level 5 Bridging	Explain in writing how to reproduce a scale drawing at a different scale, individually, given examples.

CC.7.G.2 ***Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.***

Level 1 Entering	Construct a triangle when given 3 measures of sides, using straws, string or other manipulatives.
Level 2 Emerging	Construct a triangle when given 3 measures of angles, to determine whether a unique triangle can be constructed from those angles, given examples and a word bank.
Level 3 Developing	Draw a triangle when given 3 measures of angles, and identify a unique triangle, using a word bank.
Level 4 Expanding	Draw a triangle when given 3 measures of sides or angles, and identify as a unique triangle, more than one triangle, or no triangle, with a partner.
Level 5 Bridging	Explain in writing why three sides or angles create a unique triangle, more than one triangle, or no triangle, given examples.

CC.7.G.3 ***Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.***

Level 1 Entering	Match pictures showing three-dimensional figures and their cross sections.
Level 2 Emerging	Identify attributes of the two-dimensional figure that results from slicing a three-dimensional figure, given an illustrated word bank of attribute words *(side, angle, vertex).*
Level 3 Developing	Match pictures with sentence descriptions of the two-dimensional figures that result from slicing three-dimensional figures.
Level 4 Expanding	Describe orally the two dimensional figures that result from slicing three-dimensional figures, with the support of a word bank.
Level 5 Bridging	Write descriptions of two-dimensional figures that result from slicing three-dimensional figures.

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume

CC.7.G.4 ***Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.***

Level 1 Entering	Select the appropriate formulas for the area and circumference of a circle from a list of formulas; use them to solve problems involving circles.

Level 2 Emerging	Solve problems involving the area and circumference of a circle, using known formulas.
Level 3 Developing	Solve problems involving the area and circumference of a circle, using known formulas; discuss the relationship between the circumference and the area of a circle in a small group.
Level 4 Expanding	Solve problems involving the area and circumference of a circle; discuss the relationship between the circumference and the area of a circle with a partner.
Level 5 Bridging	Solve problems involving the area and circumference of a circle; explain the relationship between the circumference and the area of a circle.

CC.7.G.5 ***Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.***

Level 1 Entering	Find the size of the unknown angle(s) in a set of supplementary, complementary, or vertical angles, given the size of one angle, with a partner.
Level 2 Emerging	Find the size of the unknown angle(s) in a set of supplementary, complementary, or vertical angles, given the size of one angle, individually.
Level 3 Developing	Discuss facts about supplementary, complementary, vertical, and adjacent angles, in a small group; then use those facts to write and solve simple equations for an unknown angle in a figure.
Level 4 Expanding	Solve multi-step problems involving unknown angles in figures showing supplementary, complementary, vertical, and adjacent angles, by writing and solving simple equations, with a partner.
Level 5 Bridging	Solve multi-step problems involving unknown angles in figures showing supplementary, complementary, vertical, and adjacent angles, by writing and solving simple equations, individually.

CC.7.G.6 ***Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.***

Level 1 Entering	Find the area, volume, and surface area of two- and three-dimensional shapes, with a partner.
Level 2 Emerging	Find the area, volume, and surface area of two- and three-dimensional shapes, individually.
Level 3 Developing	Discuss in a small group how to solve problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms; then solve the problems.
Level 4 Expanding	Solve problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms, with a partner.
Level 5 Bridging	Solve problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms, individually.

Statistics and Probability

Use random sampling to draw inferences about a population

CC.7.SP.1 ***Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.***

(No WIDA MPIs developed.)

CC.7.SP.2 ***Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions*****. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.**

(No WIDA MPIs developed.)

Draw informal comparative inferences about two populations

CC.7.SP.3 ***Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.*** **For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.**

(No WIDA MPIs developed.)

CC.7.SP.4 ***Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.*** **For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.**

(No WIDA MPIs developed.)

Investigate chance processes and develop, use, and evaluate probability models

CC.7.SP.5 ***Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.***

(No WIDA MPIs developed.)

CC.7.SP.6 ***Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.*** **For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.**

Level 1 Entering	Collect data on a chance event by observing and reporting its long-run relative frequency, with a partner.
Level 2 Emerging	Collect data on a chance event by observing and reporting its long-run relative frequency, independently.
Level 3 Developing	Collect data on a chance event by observing and reporting its long-run relative frequency; then discuss the observations in a small group and predict the approximate relative frequency for the probability.
Level 4 Expanding	Predict the approximate relative frequency of a chance event, after collecting data and observing long-run relative frequency, with a partner.
Level 5 Bridging	Predict the approximate relative frequency of a chance event, after collecting data and observing long-run relative frequency, independently.

CC.7.SP.7 ***Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.***

(See MPIs for specific standards below.)

CC.7.SP.7a ***Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.*** **For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.**

(No WIDA MPIs developed.)

CC.7.SP.7b ***Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.*** **For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?**

Level 1 Entering	Observe and record frequencies in data generated from a chance process (e.g., the probability of getting a 6 when tossing a single die).
Level 2 Emerging	Observe, record, and report frequencies in data generated from a chance process (e.g., the probability of getting a 6 when tossing a single die).
Level 3 Developing	Observe frequencies in data generated from a chance process (e.g., the probability of getting a 6 when tossing a single die), discuss how to develop a probability model in a small group.
Level 4 Expanding	Develop a probability model by observing frequencies in data generated from a chance process (e.g., the probability of getting a 6 when tossing a single die), with a partner.
Level 5 Bridging	Develop a probability model by observing frequencies in data generated from a chance process (e.g., the probability of getting a 6 when tossing a single die), individually.

CC.7.SP.8 ***Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.***

(See MPIs for specific standards below.)

CC.7.SP.8a ***Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.***

(No WIDA MPIs developed.)

CC.7.SP.8b ***Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.***

(No WIDA MPIs developed.)

CC.7.SP.8c ***Design and use a simulation to generate frequencies for compound events.*** **For example, use random digits as a simulation tool to approximate the answer to the question: if 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?**

(No WIDA MPIs developed.)