

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(viii) communicate mathematical reasoning using multiple representations, including language as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(ix) communicate [mathematical ideas'] implications using multiple representations, including symbols as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(x) communicate [mathematical ideas'] implications using multiple representations, including diagrams as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xi) communicate [mathematical ideas'] implications using multiple representations, including graphs as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xii) communicate [mathematical ideas'] implications using multiple representations, including language as appropriate

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(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xiii) communicate [mathematical reasoning's] implications using multiple representations, including symbols as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xiv) communicate [mathematical reasoning's] implications using multiple representations, including diagrams as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xv) communicate [mathematical reasoning's] implications using multiple representations, including graphs as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	(xvi) communicate [mathematical reasoning's] implications using multiple representations, including language as appropriate
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(E) create and use representations to organize, record, and communicate mathematical ideas	(i) create representations to organize mathematical ideas

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(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(E) create and use representations to organize, record, and communicate mathematical ideas	(ii) create representations to record mathematical ideas)
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(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(E) create and use representations to organize, record, and communicate mathematical ideas	(iv) use representations to organize mathematical ideas
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(E) create and use representations to organize, record, and communicate mathematical ideas	(v) use representations to record mathematical ideas
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(E) create and use representations to organize, record, and communicate mathematical ideas	(vi) use representations to communicate mathematical ideas

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(F) analyze mathematical relationships to connect and communicate mathematical ideas	(i) analyze mathematical relationships to connect mathematical ideas
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(F) analyze mathematical relationships to connect and communicate mathematical ideas	(ii) analyze mathematical relationships to communicate mathematical ideas
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(G) display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication	(i) display mathematical ideas using precise mathematical language in written or oral communication
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(G) display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication	(ii) display mathematical arguments using precise mathematical language in written or oral communication
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:	(G) display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication	(iii) explain mathematical ideas using precise mathematical language in written or oral communication



TEKS (Knowledge and Skills)	Student Expectation	Breakout
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(A) determine the patterns that identify the relationship between a function and its common ratio or related finite differences as appropriate, including linear, quadratic, cubic, and exponential functions	(iii) determine the patterns that identify the relationship between a function and its common ratio or related finite differences, including cubic functions
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(A) determine the patterns that identify the relationship between a function and its common ratio or related finite differences as appropriate, including linear, quadratic, cubic, and exponential functions	(iv) determine the patterns that identify the relationship between a function and its common ratio or related finite differences, including exponential functions
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(B) classify a function as linear, quadratic, cubic, and exponential when a function is represented tabularly using finite differences or common ratios as appropriate	(i) classify a function as linear when a function is represented tabularly using finite differences
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(B) classify a function as linear, quadratic, cubic, and exponential when a function is represented tabularly using finite differences or common ratios as appropriate	(ii) classify a function as quadratic when a function is represented tabularly using finite differences
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(B) classify a function as linear, quadratic, cubic, and exponential when a function is represented tabularly using finite differences or common ratios as appropriate	(iii) classify a function as cubic when a function is represented tabularly using finite differences

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TEKS (Knowledge and Skills)	Student Expectation	Breakout
(2) Patterns and structure. The student applies mathematical processes to connect finite differences or common ratios to attributes of functions. The student is expected to:	(D) determine a function that models real-world data and mathematical contexts using finite differences such as the age of a tree and its circumference, figurative numbers, average velocity, and average acceleration	(ii) determine a function that models mathematical contexts using finite differences
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\ddagger 1[t_x, f(x) = x^3, f(x) = {}^3 ¥ [$	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(i) compare and contrast the key attributes, including domain, of a set of functions, tabularly
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x [\frac{1}{2} _{x}, f(x) = x^3, f(x) = x^3 + [1 = b^x, f(x) = x , and f(x) \log_b (x)$ where b is 10 or e; functions and their inverses; and key attributes of these functions. The student is expected to:	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(ii) compare and contrast the key attributes, including domain, of a set of functions, graphically

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x [1]_{x}, f(x) = x^3, f(x) = x^3 + [1]_{x}, f(x) = x^2,$ $f(x) = x [1]_{x}, f(x) = x^3, f$		

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their inverses; and key attributes of these functions. The

TEKS (Knowledge and Skills)	A3 [((x)4-x()-)]T J /TT3c1 T06 Tw 3.024 0 Td (=)Tj /TT4 1 Tf 0.001 Tw 0.37x 0 Td (b)Tj 0 Tw 6.6154.68.296241.8 4(3801 Tm (x)Tj 0.001 Stutient Expectation
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x [+ \frac{1}{2} x, f(x) = x^3, f(x) = \frac{3}{2} x [- \frac{1}{2} b^x, f(x) = \frac{1}{2} x, f(x) = \frac{1}{2} x]$, and $f(x) \log_b(x)$ where b is 10 or e; functions and	esesa ae1(as)2.onsfunctiesbu3(c)2.am3(c)2.y(t)1.1(o:)]TJ EMC /P25

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = 4 \begin{bmatrix} 1 \\ 1 \end{bmatrix} $	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(ix) compare and contrast the key attributes, including maxima, of a set of functions, symbolically

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = 4 \begin{bmatrix} 1 \\ x, f(x) = x^3, f(x) = 3 \end{bmatrix} = 1 $ $= x $, and $f(x) \log_b(x)$ where b is 10 or e; functions and their inverses; and key attributes of these functions. The student is expected to:	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(xi) compare and contrast the key attributes, including minima, of a set of functions, graphically
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x [\frac{1}{2} _{x}, f(x) = x^3, f(x) = x^2] = \frac{1}{2} x$, $f(x) = \frac{1}{2} _{x}, f(x) = \frac{1}{2} _{x} _{x}$ and $f(x) \log_{b} (x)$ where b is 10 or e; functions and their inverses; and key attributes of these functions. The student is expected to:	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprisec3 -1.398 xdent is expecom	er app\$s=(x)

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^1['_x, f(x) = x^3, f(x) = {}^3 ¥ [I = I {}^x, f(x) == x , and f(x) \log_b(x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(xiii) compare and contrast the key attributes, including intercepts, of a set of functions, tabularly
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm \frac{1}{2} I_x, f(x) = x^3, f(x) = \frac{3}{2} ¥ [I = I_p^x, f(x) = x , and f(x) \log_b(x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(xiv) compare and contrast the key attributes, including intercepts, of a set of functions, graphically

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = 4 \begin{bmatrix} 1 \\ 1 \end{bmatrix} $	(A) compare and contrast the key attributes, including domain, range, maxima, minima, and intercepts, of a set of functions, such as a set comprised of a linear, a quadratic, and an exponential function or a set comprised of an absolute value, a quadratic, and a square root function, tabularly, graphically, and symbolically	(xv) compare and contrast the key attributes, including intercepts, of a set of functions, symbolically
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$,	(B) 2.2(s)2haare and cr functi-1.277 TDt1.11.1e.tions a [(am) tes ofe.tions a -16.193 1.7(as)2.4()2.(es)2.43e. tses-1n3e(t)	-1.8(o4ons)2.4()2.41.1e. tses;-1n e(t)1.1(ec)2.4(t)1.11(udent)1.1 1.1(ec)2.4(t)1.11(udent)1(es)2.43;syl2.43eng thedaarsyie and c

f(x) = 4 [$f(x), f(x) = x^3, f(x) = 3 4 [$ $f(x), f(x) = |x|, and f(x) \log_b (x)$ where b is 10 or e; functions and their inverses; and key attributes of these functions. The student is expected to:

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 (3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of =53096 0 (=)Tj]cn 4TT3 1 Tf042096 0 d ====

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x [\frac{1}{2} _x, f(x) = x^3, f(x) = x^2] [= b^x, f(x)] = x $, and $f(x) \log_b(x)$ where b is 10 or e; functions and their inverses; and key attributes of these functions. The student is expected to:	(B) compare and contrast the key attributes of a function and its inverse when it exists, including domain, range, maxima, minima, and intercepts, tabularly, graphically, and symbolically	(viii) compare and contrast the key attributes of a function and its inverse when it exists, including maxima, graphically
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = 4 \begin{bmatrix} 1 \\ x \end{bmatrix} = \frac{1}{2} \begin{bmatrix} 1 \\ x \end{bmatrix} $	(B) compare and contrast the key attributes of a function and its inverse when it exists, including domain, range, maxima, minima, and intercepts, tabularly, graphically, and	

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(3) Patterns and structure. The student applies mathematical processes to understand the connections EMC33853MC ET(=)Tj .724504.48 Ter2MC ET0 3)2.w1=

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^1[t_x, f(x) = x^3, f(x) = {}^3 ¥ [I = I {}^x, f(x) = x , and f(x) \log_b(x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(B) compare and contrast the key attributes of a function and its inverse when it exists, including domain, range, maxima, minima, and intercepts, tabularly, graphically, and symbolically	(xii) compare and contrast the key attributes of a function and its inverse when it exists, including minima, symbolically
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^1[t_x, f(x) = x^3, f(x) = {}^3 ¥ [I = I {}^x, f(x) = x , and f(x) \log_b(x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(B) compare and contrast the key attributes of a function and its inverse when it exists, including domain, range, maxima, minima, and intercepts, tabularly, graphically, and symbolically	(xiii) compare and contrast the key attributes of a function and its inverse when it exists, including intercepts, tabularly

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^{1}[t_x, f(x) = x^3, f(x) = {}^{3} ¥ [I = [b]^x, f(x) = {}^{1}[x], and f(x) \log_b (x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(B) compare and contrast the key attributes of a function and its inverse when it exists, including domain, range, maxima, minima, and intercepts, tabularly, graphically, and symbolically	(xv) compare and contrast the key attributes of a function and its inverse when it exists, including intercepts, symbolically

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^1['_x, f(x) = x^3, f(x) = {}^3 ¥ [I = [b]^x, f(x) = { x , and f(x) \log_b (x)} where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(D) represent a resulting function tabularly, graphically, and symbolically when functions, are combined or separated using arithmetic operations, such as combining a 20% discount and a 6% sales tax on a sale to determine $h(x)$ the total sale, $f(x) = 0.8x$, $g(x) = 0.06(0.8x)$, and $h \notin x / x + g(x)$	(i) represent a resulting function tabularly when functions, are combined or separated using arithmetic operations
(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm {}^1[t_x, f(x) = x^3, f(x) = {}^3 ¥ [I = I at x, f(x) = {}^x, $	(D) represent a resulting function tabularly, graphically, and symbolically when functions, are combined or separated using arithmetic operations, such as combining a 20% discount and a 6% sales tax on a sale to determine $h(x)$, the total sale, $f(x) = 0.8x$, $g(x) = 0.06(0.8x)$, and $h(x) + g(x)$	(ii) represent a resulting function graphically when functions, are combined or separated using arithmetic operations

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = x = \begin{bmatrix} 1 & 1 \\ 1 & x \end{bmatrix}$, $f(x) = x^3$, $f(x) = x^3 + \begin{bmatrix} 1 & 1 \\ 1 & x \end{bmatrix}$		

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(3) Patterns and structure. The student applies mathematical processes to understand the connections among representations of functions and combinations of functions including the constant function, $f(x) = x$, $f(x) = x^2$, $f(x) = ¥ [\pm \frac{1}{2} [x, f(x) = x^3, f(x) = \frac{3}{2} ¥ [] = [b]^x, f(x)= x , and f(x) \log_b(x) where b is 10 or e; functions andtheir inverses; and key attributes of these functions. Thestudent is expected to:$	(F) compare and contrast a function and possible functions that can be used to build it tabularly, graphically, and symbolically such as a quadratic function that results from multiplying two linear functions	(iii) compare and contrast a function and possible functions that can be used to build it symbolically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(A) connect tabular representations to symbolic representations when adding, subtracting, and multiplying polynomial functions arising from mathematical and real- world situations, such as applications involving surface area and volume	(i) connect tabular representations to symbolic representations when adding polynomial functions arising (i) from mathematical situations rep wo[62.3(ent)1.1(at)1.1(i)3.3(ons)2.4(w)3.6(hen addi)3.3(ng pol) and volume

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(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(B) compare and contrast the results when adding two linear functions and multiplying two linear functions that are represented tabularly, graphically, and symbolically	(ii) compare and contrast the results when adding two linear functions that are represented graphically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(B) compare and contrast the results when adding two linear functions and multiplying two linear functions that are represented tabularly, graphically, and symbolically	(iii) compare and contrast the results when adding two linear functionsthat are represented symbolically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(B) compare and contrast the results when adding two linear functions and multiplying two linear functions that are represented tabularly, graphically, and symbolically	(iv) compare and contrast the results when multiplying two linear functions that are represented tabularly
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(B) compare and contrast the results when adding two linear functions and multiplying two linear functions that are represented tabularly, graphically, and symbolically	(v) compare and contrast the results when multiplying two linear functions that are represented graphically

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(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(B) compare and contrast the results when adding two linear functions and multiplying two linear functions that are represented tabularly, graphically, and symbolically	(vi) compare and contrast the results when multiplying two linear functions that are represented symbolically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when represented tabularly and symbolically	(i) determine the quotient of a polynomial function of degree three when divided by a polynomial function of degree one when represented tabularly
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when represented tabularly and symbolically	(ii) determine the quotient of a polynomial function of degree

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(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when represented tabularly and symbolically	(iv) determine the quotient of a polynomial function of degree three when divided by a polynomial function of degree two when represented symbolically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The student is expected to:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when represented tabularly and symbolically	(v) determine the quotient of a polynomial function of degree four when divided by a polynomial function of degree one when represented tabularly
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real-world situations. The studient is expected by:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when repre502t3(ctath)113(ctath)115(arbbi)13c2(by20.964(1)3.3(y)2.3(and	s)2.3(y)r)-2.1he studentis expected 20:

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(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(C) determine the quotient of a polynomial function of degree three and of degree four when divided by a polynomial function of degree one and of degree two when represented tabularly and symbolically	(viii) determine the quotient of a polynomial function of degree four when divided by a polynomial function of degree two when represented symbolically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(D) determine the linear factors of a polynomial function of degree two and of degree three when represented symbolically and tabularly and graphically where appropriate	(i) determine the linear factors of a polynomial function of degree two when represented symbollically
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(D) determine the linear factors of a polynomial function of degree two and of degree three when represented symbolically and tabularly and graphically where appropriate	(ii) determine the linear factors of a polynomial function of degree two when represented tabularly (where appropriate)
(4) Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on functions represented in a variety of ways, including real- world situations. The student is expected to:	(D) determine the linear factors of a polynomial function of degree two and of degree three when represented symbolically and tabularly and graphically where appropriate	(iii) determine the linear factors of a polynomial function of degree two when represented graphically (where appropriate)

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TEKS (Knowledge and Skills)	Student Expectation	Breakout
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TEKS Breakouts

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(A) estimate a reasonable input value that results in a given output value for a given function, including quadratic, rational, and exponential functions	(ii) estimate a reasonable input value that results in a given output value for a given function, including rational functions
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(A) estimate a reasonable input value that results in a given output value for a given function, including quadratic, rational, and exponential functions	(iii) estimate a reasonable input value that results in a given output value for a given function, including exponential functions
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(B) solve equations arising from questions asked about functions that model real-world applications, including linear and quadratic functions, tabularly, graphically, and symbolically	(i) solve equations arising from questions asked about functions that model real-world applications, including linear functions, tabularly

(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(B) solve equations arising from questions asked about functions that model real-world applications, including linear and quadratic functions, tabularly, graphically, and symbolically	(iii) solve equations arising from questions asked about functions that model real-world applications, including linear functions, symbolically
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(B) solve equations arising from questions asked about functions that model real-world applications, including linear and quadratic functions, tabularly, graphically, and symbolically	(iv) solve equations arising from questions asked about functions that model real-world applications, including quadratic functions, tabularly
 (6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to: (B) solve equations arising from questions asked about functions that model real-world applications, including linear and quadratic functions, tabularly, graphically, and symbolically 		(v) solve equations arising from questions asked about functions that model real-world applications, including quadratic functions, graphically
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(B) solve equations arising from questions asked about functions that model real-world applications, including linear and quadratic functions, tabularly, graphically, and symbolically	(vi) solve equations arising from questions asked about functions that model real-world applications, including quadratic functions, symbolically

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(6) Number and algebraic methods. The student applies mathematical processes to estimate and determine solutions to equations resulting from functions and real-world applications with fluency. The student is expected to:	(C) approximate solutions to equations arising from questions asked about exponential, logarithmic, sequare root, and cubic functions that model real-world applications tabularly and graphically	(v) approximate solutions 3 to expretions arising forom questions ask and boal-square root functions that model real-world applications tabularly

TEKS (Knowledge and Skills)	(Knowledge and Skills) Student Expectation Breakout	
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(A) represent the domain and range of a function using interval notation, inequalities, and set (builder) notation	(ii) represent the domain of a function using inequalities
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(A) represent the domain and range of a function using interval notation, inequalities, and set (builder) notation	(iii) represent the domain of a function using set (builder) notation
 (7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to: (A) represent the domain and range of a function using interval notation, inequalities, and set (builder) notation 		(iv) represent the range of a function using interval notation
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(A) represent the domain and range of a function using interval notation, inequalities, and set (builder) notation	(v) represent the range of a function using inequalities
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(A) represent the domain and range of a function using interval notation, inequalities, and set (builder) notation	(vi) represent the range of a function using set (builder) notation

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(B) compare and contrast between the mathematical and reasonable domain and range of functions modeling real- world situations, including linear, quadratic, exponential, and rational functions	(vi) compare and contrast between the mathematical and reasonable range of functions modeling real-world situations, including quadratic functions
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(B) compare and contrast between the mathematical and reasonable domain and range of functions modeling real- world situations, including linear, quadratic, exponential, and rational functions	(vii) compare and contrast between the mathematical and reasonable range of functions modeling real-world situations, including exponential functions
 (7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to: (B) compare and contrast between the mathematical and reasonable domain and range of functions modeling real-world situations, including linear, quadratic, exponential, and rational functions 		(viii) compare and contrast between the mathematical and reasonable range of functions modeling real-world situations, including rational functions
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(C) determine the accuracy of a prediction from a function that models a set of data compared to the actual data using comparisons between average rates of change and finite differences such as gathering data from an emptying tank and comparing the average rate of change of the volume or the second differences in the volume to key attributes of the given model	(i) determine the accuracy of a prediction from a function that models a set of data compared to the actual data using comparisons between average rates of change and finite differences
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(D) determine an appropriate function model, including linear, quadratic, and exponential functions, for a set of data arising from real-world situations using finite differences and average rates of change	(i) determine an appropriate function model, including linear functions, for a set of data arising from real-world situations using finite differences

TEKS (Knowledge and Skills)	Student Expectation	Breakout
(7) Modeling from data. The student applies mathematical processes to analyze and model data based on real-world situations with corresponding functions. The student is expected to:	(E) determine if a given linear function is a reasonable model for a set of data arising from a real-world situation	(i) determine if a given linear function is a reasonable model for a set of data arising from a real-world situation.

NA

 (D) speak using learning strategies such as requesting assistance, employing non-verbal cues, and using synonyms and circumlocution (conveying ideas by defining >>>>> or describing when exact English words are not known) 	T: 9-12 S: 9-12

(E) internalize new basic and academic language by using and reusing it in meaningful ways in speaking and writing activities that build concept and language attainment

(1) internalize new basic language by using and reusing it in meaningful ways in speaking activities that build concept and language attainment

(E)

(G) demonstrate an increasing ability to distinguish between formal and informal English and an increasing knowledge of when to use each one commensurate with grade-level learning expectations	(2) demonstrate an increasing knowledge of when to use [formal and informal English] commensurate with grade-level learning expectations	NA		
(H) develop and expand repertoire of learning strategies such as reasoning inductively or deductively, looking for patterns in language, and analyzing sayings and expressions commensurate with grade-level learning expectations	>>>>>	NA		
(2) Cross-curricular second language acquisition/listening. The ELL listens to a variety of speakers including teachers, peers, and electronic media to gain an increasing level of comprehension of newly acquired language in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in listening. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. The student is expected to:				
(A) distinguish sounds and intonation patterns of English with increasing ease	(1) distinguish sounds of English with increasing ease	NA		
(A) distinguish sounds and intonation patterns of English with increasing ease	(2) distinguish intonation patterns of English with increasing ease	NA		
(B) recognize elements of the English sound system in newly acquired vocabulary such as long and short vowels, silent letters, and consonant clusters	>>>>	NA		
(C) learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	(1) learn new language structures heard during classroom instruction and interactions	T: 9-12		

(C) learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	(2) learn new expressions heard during classroom instruction and interactions	T: 9-12
(C) learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	(3) learn basic vocabulary heard during classroom instruction and interactions	T: 9-12 S: 9-12
(C) learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	(4) learn academic vocabulary heard during classroom instruction and interactions	T: 9-12 S: 9-12
(D) monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed	(1) monitor understanding of spoken language during classroom instruction and interactions	T: 9-12
(D) monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed	(2) seek clarification [of spoken language] as needed	T: 9-12 S: 9-12
(E) use visual, contextual, and linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	(1) use visual support to enhance and confirm understanding of increasingly complex and elaborated spoken language	NA
(E) use visual, contextual, and linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	(2) use contextual support to enhance and confirm understanding of increasingly complex and elaborated spoken language	NA
(E) use visual, contextual, and linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	(3) use linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	T: 9-12 S: 9-12

(F) listen to and derive meaning from a variety of media such as audio tape, video, DVD, and CD ROM to build and reinforce concept and language attainment	(1) listen to and derive meaning from a variety of media to build and reinforce concept attainment	NA
(F) listen to and derive meaning from a variety of media such as audio tape, video, DVD, and CD ROM to build and reinforce concept and language attainment	(2) listen to and derive meaning from a variety of media to build and reinforce language attainment	NA
(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and con36Attats are3(c)2 language attainment	2.3(h t)t_are manguage,5.4(gua(TDC_31.)2.3(t)1.1(x [35e,(anguag(N)0.6(A)]TJ EMC	/P3rnDa/P3rnD 69p4())-2.1 [(N)0.

poi)3.2(nt)1.1(s)2.3(,)1.1(and i)3.3(m)-1.8(por)-2.2(t)1.1(ant)1(det)1.1(ai)3.3(l)3.3(s)2.3(of)1(s)2.4(p)/2.4(en)]TJ T* [(l)3.3(anguage r)-2.1(angi)3.3(ng f)1.1(r)-2.1(om)-1.7(s)2.3(i)3.3(t)1.1(uat)1.1(i)3.3(ons)2.4(i)3.2(n

(G) understand the general meaning, ain point.ts, and important details of spoken

(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	(6) understand the main points of spoken language ranging from situations in which contexts are familiar to unfamiliar	NA
(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	(7) understand the important details of spoken language ranging from situations in which topics are familiar to unfamiliar	NA
(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	(8) understand the important details of spoken language ranging from situations in which language [is] are familiar to unfamiliar	NA
(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	(9) understand the important details of spoken language ranging from situations in which contexts are familiar to unfamiliar	NA
(H) understand implicit ideas and information in increasingly complex spoken language commensurate with grade-level learning expectations	(1) understand implicit ideas in increasingly complex spoken language commensurate with grade-level learning expectations	NA
(H) understand implicit ideas and information in increasingly complex spoken language commensurate with grade-level learning expectations	(2) understand information in increasingly complex spoken language commensurate with grade-level learning expectations	NA
(I) demonstrate listening comprehension of increasingly complex spoken English by following directions, retelling or summarizing spoken messages, responding to questions and requests, collaborating with peers, and taking notes commensurate with content and grade-level needs	(1) demonstrate listening comprehension of increasingly complex spoken English by following directions commensurate with content and grade-level needs	NA

(B) expand and internalize initial English vocabulary by learning and using high- frequency English words necessary for identifying and describing people, places, and objects, by retelling simple stories and basic information represented or supported by pictures, and by learning and using routine language needed for classroom communication	(1) expand and internalize initial English vocabulary by learning and using high- frequency English words necessary for identifying and describing people, places, and objects	NA
(B) expand and internalize initial English vocabulary by learning and using high- frequency English words necessary for identifying and describing people, places, and objects, by retelling simple stories and basic information represented or supported by pictures, and by learning and using routine language needed for classroom communication	(2) expand and internalize initial English vocabulary by retelling simple stories and basic information represented or supported by pictures	NA
(B) expand and internalize initial English vocabulary by learning and using high- frequency English words necessary for identifying and describing people, places, and objects, by retelling simple stories and basic information represented or supported by pictures, and by learning and using routine language needed for classroom communication	(3) expand and internalize initial English vocabulary by learning and using routine language needed for classroom communication	T: 9-12 S: 9-12
(C) speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired	(1) speak using a variety of grammatical structures with increasing accuracy and ease as more English is acquired	NA
(C) speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired	(2) speak using a variety of sentence lengths with increasing accuracy and ease as more English is acquired	NA
(C) speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired	(3) speak using a variety of sentence types with increasing accuracy and ease as more English is acquired	NA

(C) speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired

(4) speak using a variety of connecting words with increasing accuracy and ease as	T: 9-12
more English is acquired	S: 9-12

(D) speak using grade-level content area vocabulary in context to internalize new

 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics (2) express ideas ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics 	
 (G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics (3) express feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics 	

(J) respond orally to information presented in a wide variety of print, electronic, audio, and visual media to build and reinforce concept and language attainment

(2) respond orally to information presented in a wide variety of print, electronic, audio, and visual media to build and reinforce language attainment

N/A

(4) Cross-curricular second language acquisition/reading. The ELL reads a variety of texts for a variety of purposes with an increasing level of comprehension in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in reading. In order for the ELL to meet grade-level learning expectations across the foundation

(A) learn relationships between sounds and letters of the English language and decode (sound out) words using a combination of skills such as recognizing sound-letter relationships and identifying cognates, affixes, roots and base words	(1) learn relationships between sounds and letters of the English language	NA
(A) learn relationships between sounds and letters of the English language and decode (sound out) words using a combination of skills such as recognizing sound-letter relationships and identifying cognates, affixes, roots and base words	(2) decode (sound out) words using a combination of skills	NA
(B) recognize directionality of English reading such as left to right and top to bottom	>>>>>	NA
(C) develop basic sight vocabulary, derive meaning of environmental print, and comprehend English vocabulary and language structures used routinely in written classroom materials	(1) develop basic sight vocabulary used routinely in written classroom materials	T: 9-12 S: 9-12

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(C) develop basic sight vocabulary, derive meaning of enviro comprehend English vocabulary and language structures us classroom materials	onmental print, and ed routinely in written	(2) derive meaning of environmental print	T: 9-12 S: 9-12
(C) develop basic sight vocabulary, derive meaning of enviro comprehend English vocabulary and language structures us classroom materials	onmental print, and ed routinely in written	(3) comprehend English vocabulary used routinely in written classroom materials	T: 9-12 S: 9-12
(C) develop basic sight vocabulary, derive meaning of enviro comprehend English vocabulary and language structures us classroom materials	onmental print, and ed routinely in written	(4) comprehend English language structures used routinely in written classroom materials	T: 9-12 S: 9-12
(D) use prereading supports such as graphic organizers, illus topic-related vocabulary and other prereading activities to en of written text	strations, and pretaught hance comprehension	>>>>>	T: 9-12 S: 9-12

(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	(2) use visual and contextual support to enhance and confirm understanding	T: 9-12 S: 9-12

(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language

(3) use visual and contextual support to develop vocabulary needed to comprehend

(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	(7) use support from peers and teachers to enhance and confirm understanding	T: 9-12 S: 9-12
(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	(8) use support from peers and teachers to develop vocabulary needed to comprehend increasingly challenging language	T: 9-12 S: 9-12
(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	(9) use support from peers and teachers to develop grasp of language structures needed to comprehend increasingly challenging language	T: 9-12 S: 9-12
(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	(10) use support from peers and teachers to develop background knowledge needed to comprehend increasingly challenging language	T: 9-12 S: 9-12
(G) demonstrate comprehension of increasingly complex English by participating in shared reading, retelling or summarizing material, responding to questions, and taking notes commensurate with content area and grade level needs	(1) demonstrate comprehension of increasingly complex English by participating in shared reading commensurate with content area and grade level needs	NA

(B) write using newly acquired basic vocabulary and content-based grade-level vocabulary	(2) write using content-based grade-level vocabulary	NA
(C) spell familiar English words with increasing accuracy, and employ English spelling patterns and rules with increasing accuracy as more English is acquired	(1) spell familiar English words with increasing accuracy	NA
(C) spell familiar English words with increasing accuracy, and employ English spelling patterns and rules with increasing accuracy as more English is acquired	(2) employ English spelling pattern with increasing accuracy as more English is acquired	NA
(C) spell familiar English words with increasing accuracy, and employ English spelling patterns and rules with increasing accuracy as more English is acquired	(3) employ English spelling rules with increasing accuracy as more English is acquired	NA
(D) edit writing for standard grammar and usage, including subject-verb agreementpro pronoun agreement, and appropriate verb tenses commensurate with grade-level expectations as more English is acquired	noun agreement, and appropriate verb tenses commensurate with grade-level (1) edit writing for standard grammar and usage, including subject-verb agreement commensurate with grade-level expectations as more English is acquired	NA commensurate with grade-le

(E) employ increasingly complex grammatical structures in content area writing commensurate with grade level expectations such as (i) using correct verbs, tenses, and pronouns/antecedents; (ii) using possessive case (apostrophe -s) correctly; and, (iii) using negatives and contractions correctly	>>>>>	NA
(F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired	(1) write using a variety of grade-appropriate sentence lengths in increasingly accurate ways as more English is acquired	NA
(F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired	(2) write using a variety of grade-appropriate sentence patterns in increasingly accurate ways as more English is acquired	NA
(F) write using a variety of grade-appropriate sentence lengths, patterns, and connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired	(3) write using a variety of grade-appropriate connecting words to combine phrases, clauses, and sentences in increasingly accurate ways as more English is acquired	NA
(G) narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	(1) narrate with increasing specificity and detail to fulfill content area writing needs as more English is acquired	NA
(G) narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	(2) describe with increasing specificity and detail to fulfill content area writing needs as more English is acquired	NA
(G) narrate, describe, and explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	(3) explain with increasing specificity and detail to fulfill content area writing needs as more English is acquired	NA