Assessment Blueprint - Unit 5 Introduction to Exponential Functions

Unit 5 Overview and Readiness (prerequisite skill assessment)

Item	TEKS
1	Math 8.5(I) write an equation in the form $y=mx+b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations
2	Math 7.11(A) model and solve one-variable, two-step equations and inequalities
3	Math 6.7(A) generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization

Unit 5 Section A

Item	TEKS
1	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents
2	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents
3	A3(B) calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems
4	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
5	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay

Unit 5 Section B

Item	TEKS
1	A9(A) determine the domain and range of exponential functions of the form $f(x)=ab^x$ and represent the domain and range using inequalities
2	A9(E) write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems
3	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
4	A9(B) interpret the meaning of the values of a and b in exponential functions of the form $f(x)=ab^x$ in real-world problems
5	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents

Unit 5 Section C

Item	TEKS
1	A3(C) graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems A9(D) graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems
2	A9(B) interpret the meaning of the values of a and b in exponential functions of the form $f(x)=ab^x$ in real-world problems
3	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents
4	A3(E) determine the effects on the graph of the parent function $f(x)=x$ when $f(x)$ is replaced by $af(x)$, $f(x)+d$, $f(x-c)$, $f(bx)$ for specific values of a, b, c, and d

Unit 5 Quiz

Item	TEKS
1	A9(D) graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems A3(C) graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems
2	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
3	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
4	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
5	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
6	A9(D) graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems
7	A9(B) interpret the meaning of the values of a and b in exponential functions of the form $f(x)=ab^x$ in real-world problems
8	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay

Unit 5 STAAR Review

Item	TEKS
1	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
2	A11(B) simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents
3	A9(E) write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems
4	A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay
5	A9(A) determine the domain and range of exponential functions of the form $f(x)=ab^x$ and represent the domain and range using inequalities
6	A3(B) calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems
7	A2(A) determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations; both continuous and discrete; and represent domain and range using inequalities
8	A4(B) compare and contrast association and causation in real-world problems
9	A2(H) write linear inequalities in two variables given a table of values, a graph, and a verbal description
10	A2(C) write linear equations in two variables given a table of values, a graph, and a verbal description

Unit 5 Project

TEKS
A2(C) write linear equations in two variables given a table of values, a graph, and a verbal description
A9(C) write exponential functions in the form $f(x)=ab^x$ (where b is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay