

During the 2015-16 school year, Tennessee educators met to develop Performance Level Descriptors (PLDs) to accompany the suite of TCAP assessments.

Policy Performance Level Descriptors

Policy PLDs describe the specific knowledge and skills that a student at a given performance level should be able to demonstrate. The following PLDs were used in the standards setting process by Tennessee educators when determining the cut scores for the high school ELC assessments.

- **Level 4 (Mastered)** - Performance at this level demonstrates that the student has an extensive understanding and expert ability to apply the grade/course level knowledge and skills defined by the Tennessee academic standards.
- **Level 3 (On-track)** - Performance at this level demonstrates that the student has a comprehensive understanding and thorough ability to apply the grade/course level knowledge and skills defined by the Tennessee academic standards.
- **Level 2 (Approaching)** - Performance at this level demonstrates that the student is approaching understanding and has a partial ability to apply the grade/course level knowledge and skills defined by the Tennessee academic standards.
- **Level 1 (Below)** - Performance at this level demonstrates that the student has a minimal understanding and has a nominal ability to apply the grade/course level knowledge and skills defined by the Tennessee academic standards.

Range Performance Level Descriptors

A second group of TN content specialists convened to write course specific range PLDs for high school math, ELA and US History courses. These range PLDs describe within each course specific skills students may be able to accomplish if they are performing within each of the performance levels indicated above.

The Range PLDs follow in this document. These documents were used to guide discussion during the standards setting process. They do not describe every skill that exists within any given course. Below is a description of how these documents should be used by educators:

Range PLDs could be used to:

- Examine how standards may be represented across the continuum of an assessment
- Gain further understanding of TN academic standards
- Provide a concrete example of performance levels within a course
- Assist in targeting skills for refinement and/or intervention based on formative or benchmark assessment data

Range PLDs are not intended to:

- Represent an exhaustive list of all content skills within a course
- Replace TN state content standards
- Predict performance levels for students
- Influence curriculum development

**TCAP/TNReady: High School ELA
Range Performance Level Descriptors**

High School English Language Arts				
Sub-Score Categories	Level 1	Level 2	Level 3	Level 4
Writing- Focus and Organization	<p>Performance at this level demonstrates that the student has a minimal understanding of writing with focus and organization. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> • develops an unclear, or irrelevant introduction • utilizes inadequate organizational strategies • develops an unclear, irrelevant, or no conclusion rarely clarifies relationships relevant to the context 	<p>Performance at this level demonstrates that the student is approaching understanding of writing with focus and organization. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> • develops a limited introduction • utilizes limited organizational strategies • develops a limited conclusion inconsistently clarifies relationships that leave gaps in cohesion 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of writing with focus and organization. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> • develops a relevant introduction • utilizes adequate organizational strategies to create a mostly unified whole • develops a relevant conclusion consistently clarifies logical relationships to create cohesion 	<p>Performance at this level demonstrates that the student has an extensive understanding of writing with focus and organization. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> • develops an effective and relevant introduction • utilizes effective organizational strategies to create a unified whole • develops an effective and relevant conclusion • effectively clarifies logical relationships to create cohesion
Writing - Development	Performance at this level demonstrates that the student has a minimal	Performance at this level demonstrates that the student is approaching	Performance at this level demonstrates that the student has a	Performance at this level demonstrates that the student has an extensive

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	<p>understanding of Writing: Development. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> incorporates unclear, irrelevant, or no narrative details or textual evidence inadequately and/or inaccurately elaborates on narrative details or textual evidence 	<p>understanding of Writing: Development. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> incorporates some relevant though insufficient narrative details or textual evidence partially or inaccurately elaborates on relevant narrative details or textual evidence 	<p>comprehensive understanding of Writing: Development. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> incorporates relevant and sufficient narrative details or textual evidence adequately and accurately elaborates on relevant narrative details or textual evidence 	<p>understanding of Writing: Development. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> incorporates well-chosen, relevant, and sufficient narrative details or textual evidence thoroughly, accurately, and insightfully elaborates on well-chosen narrative details or textual evidence
Writing – Language & Style	<p>Performance at this level demonstrates that the student has a minimal understanding of Writing: Language & Style. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> utilizes little to no precise language and domain-specific vocabulary utilizes no or few transitional words and phrases 	<p>Performance at this level demonstrates that the student is approaching understanding of Writing: Language & Style. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> inconsistently utilizes precise language and domain-specific vocabulary utilizes basic or repetitive transitional words and phrases 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Writing: Language & Style. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> consistently utilizes precise language and domain-specific vocabulary utilizes appropriate and varied 	<p>Performance at this level demonstrates that the student has an extensive understanding of Writing: Language & Style. In response to the task and the stimuli, the student:</p> <ul style="list-style-type: none"> consistently utilizes sophisticated and precise language and domain-specific vocabulary utilizes sophisticated and varied

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	<ul style="list-style-type: none"> uses little to no syntactic variety does not establish or maintain an appropriate style and tone relevant to the task 	<ul style="list-style-type: none"> uses limited syntactic variety establishes but inconsistently maintains an appropriate style and tone relevant to the task 	<ul style="list-style-type: none"> transitional words and phrases consistently uses syntactic variety establishes and maintains an appropriate style and tone relevant to the task 	<ul style="list-style-type: none"> transitional words and phrases consistently uses sophisticated syntactic variety effectively establishes and maintains an appropriate style and tone relevant to the task
Reading - Literature	<p>Performance at this level demonstrates that the student has a minimal understanding of Reading – Literature. When reading literature and answering text-dependent questions, the student:</p> <ul style="list-style-type: none"> inadequately analyzes and comprehends complex texts within the text complexity band 	<p>Performance at this level demonstrates that the student is approaching understanding of Reading – Literature. When reading literature and answering text-dependent questions, the student:</p> <ul style="list-style-type: none"> minimally analyzes and comprehends complex texts within the text complexity band 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Reading – Literature. When reading literature and answering text-dependent questions, the student:</p> <ul style="list-style-type: none"> adequately analyzes and comprehends complex texts within the text complexity band 	<p>Performance at this level demonstrates that the student has an extensive understanding of Reading – Literature. When reading literature and answering text-dependent questions, the student:</p> <ul style="list-style-type: none"> effectively comprehends and analyzes complex texts within the text complexity band
Reading – Informational Text	<p>Performance at this level demonstrates that the student has a minimal understanding of Reading – Informational Text.</p>	<p>Performance at this level demonstrates that the student is approaching understanding of Reading – Informational Text.</p>	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Reading – Informational Text.</p>	<p>Performance at this level demonstrates that the student has an extensive understanding of Reading – Informational Text.</p>

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	<p>When reading informational text and answering text-dependent questions, the student:</p> <ul style="list-style-type: none"> • inadequately analyzes and comprehends complex texts within the text complexity band 	<p>When reading informational text and answering text-dependent questions, the student</p> <ul style="list-style-type: none"> • minimally analyzes and comprehends complex texts within the text complexity band 	<p>When reading informational text and answering text-dependent questions, the student</p> <ul style="list-style-type: none"> • adequately analyzes and comprehends complex texts within the text complexity band 	<p>When reading informational text and answering text-dependent questions, the student</p> <ul style="list-style-type: none"> • effectively comprehends and analyzes complex texts within the text complexity band
Reading - Vocabulary	<p>Performance at this level demonstrates that the student has a minimal understanding of Reading – Vocabulary. When reading a text of appropriate complexity, the student:</p> <ul style="list-style-type: none"> • rarely determines the correct meaning of unknown words and/or phrases, including figurative language and technical vocabulary rarely analyzes the impact of specific word choice on meaning and tone 	<p>Performance at this level demonstrates that the student is approaching understanding of Reading – Vocabulary. When reading a text of appropriate complexity, the student:</p> <ul style="list-style-type: none"> • minimally determines the correct meaning of unknown words and/or phrases, including figurative language and technical vocabulary minimally analyzes the impact of specific word choice on meaning and tone 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Reading – Vocabulary. When reading a text of appropriate complexity, the student:</p> <ul style="list-style-type: none"> • frequently determines the correct meaning of unknown words and/or phrases, including figurative language and technical vocabulary frequently analyzes the impact of specific word 	<p>Performance at this level demonstrates that the student has an extensive understanding of Reading – Vocabulary. When reading a text of appropriate complexity, the student:</p> <ul style="list-style-type: none"> • consistently determines the correct meaning of unknown words and/or phrases, including figurative language and technical vocabulary consistently analyzes the impact of specific word

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			choice on meaning and tone	choice on meaning and tone
Conventions	<p>Performance at this level demonstrates that the student has a minimal understanding of Conventions. The student:</p> <ul style="list-style-type: none"> • rarely demonstrates grade-appropriate command of the conventions of standard English 	<p>Performance at this level demonstrates that the student is approaching understanding of Conventions. The student:</p> <ul style="list-style-type: none"> • minimally demonstrates grade-appropriate command of the conventions of standard English 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Conventions. The student:</p> <ul style="list-style-type: none"> • frequently demonstrates grade-appropriate command of the conventions of standard English 	<p>Performance at this level demonstrates that the student has an extensive understanding of Conventions. The student:</p> <ul style="list-style-type: none"> • consistently demonstrates grade-appropriate command of the conventions of standard English

**TCAP US History: End of Course
Range Performance Level Descriptors**

United States History and Geography: Post Reconstruction to the Present					
Sub-Score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
The Rise of Industrial America and the Progressive Era	US.01 to US.30	<p>Performance at this level demonstrates that the student has a minimal understanding of the Rise of Industrial America and the Progressive Era. Students at this level are able to:</p> <ul style="list-style-type: none"> • list reconstruction policies • recall the industrial growth in technology • label the figures of the Progressive Era • define the reform movements • recall minimal information about ideologies of the Era • identify several causes, events, 	<p>Performance at this level demonstrates that the student is approaching understanding of the Rise of Industrial America and the Progressive Era. Students at this level are able to:</p> <ul style="list-style-type: none"> • summarize the effects of reconstruction policies • identify the industrial growth in technology • recognize the key figures in industry and the Progressive Era • explain reform movements • compare ideologies of the Era • recognize the causes, events, and leaders of World War I • examine themes across time • summarize information from either a primary/secondary 	<p>Performance at this level - indicates that the student demonstrates that the student has a comprehensive understanding of the Rise of Industrial America and the Progressive Era. Students at this level are able to:</p> <ul style="list-style-type: none"> • interpret the effects of reconstruction policies including the effects on migration and racial tensions • explain the significance of agricultural and industrial growth in technology • describe the key figures in industry and Progressive Era politics • examine the rise of labor unions and reform movements • compare and contrast ideologies of the Era 	<p>Performance at this level demonstrates that the student has an extensive understanding of the Rise of Industrial America and the Progressive Era. Students at this level are able to:</p> <ul style="list-style-type: none"> • analyze the effects of reconstruction policies including the effects on migration and racial tensions • evaluate the significance of agricultural and industrial growth in technology • reflect on the impact of key figures in industry as well as the Progressive Era

**TCAP US History: End of Course
Range Performance Level Descriptors**

		<p>and leaders of World War I</p> <ul style="list-style-type: none"> reproduce or list information from a primary/secondary source, informational text or prior knowledge in order to explore historical events 	<p>source, informational text, and/or prior knowledge in order to explore historical events.</p>	<ul style="list-style-type: none"> outline the causes, courses, politics, and key leaders of World War I investigate regional themes across time analyze primary/secondary sources and other stimuli in order to explore historical trends 	<p>politics; justifying the origins of labor unions and reform movements</p> <ul style="list-style-type: none"> debate the significant ideologies of the Era integrate the causes, courses, politics, and key leaders of World War I in order to understand the historical significance. integrate regional themes across time through extended writing synthesize primary/secondary sources and other stimuli to draw conclusions and justify the students' claim(s) on historical trends
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**TCAP US History: End of Course
Range Performance Level Descriptors**

<p style="text-align: center;">The 1920s and the Great Depression</p>	<p style="text-align: center;">US.31 to US.53</p>	<p>Performance at this level demonstrates that the student has a minimal understanding of the 1920's and the Great Depression. Students at this level are able to:</p> <ul style="list-style-type: none"> • report about life in the 1920s and 1930s • list the causes and effects of the Great Depression • define the New Deal • identify the changes in popular culture and mass media • recall both positive and negative racial roles • reproduce or list information from a primary/secondary source, informational text or prior knowledge in 	<p>Performance at this level - demonstrates that the student is approaching understanding of the 1920's and the Great Depression. Students at this level are able to:</p> <ul style="list-style-type: none"> • summarize life in the 1920s and 1930s • recognize the causes and effects of the Great Depression • identify the New Deal • cite examples the rise of popular culture and mass media • identify both positive and negative racial roles, of both American Indians and African Americans • examine themes across time • summarize information from either a primary/secondary source, informational text, and/or prior knowledge in order to explore historical events 	<p>Performance at this level - demonstrates that the student has a comprehensive understanding of the 1920's and the Great Depression. Students at this level are able to:</p> <ul style="list-style-type: none"> • compare and contrast life in the 1920s and 1930s, including the philosophies of Presidents • discuss the causes and effects of the Great Depression • explain Roosevelt's policies including the New Deal and the role of Tennessee in it • trace and explain the rise of popular culture and mass media • examine the changing racial roles (both positive and negative), of both American Indians and African Americans • investigate regional themes across time • analyze primary/secondary sources and other 	<p>Performance at this level demonstrates that the student has an extensive understanding of the 1920's and the Great Depression. Students at this level are able to:</p> <ul style="list-style-type: none"> • reflect on life in the 1920s and 1930s including the philosophies of the Presidents • evaluate the causes and effects of the Great Depression and its impact on America • analyze Roosevelt's policies, including the New Deal, and the role of Tennessee in it (including its controversies) • debate the impact of the rise of popular culture and role of mass media
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**TCAP US History: End of Course
Range Performance Level Descriptors**

		order to explore historical events		stimuli in order to explore historical trends	<ul style="list-style-type: none">• draw conclusions about the changing racial roles (both positive and negative), of both American Indians and African Americans• integrate the causes, courses, politics, and key leaders during the 1920's and The Great Depression in order to understand the historical significance.• integrate regional themes across time through extended writing• synthesize primary/secondary sources and other stimuli to draw conclusions and justify the students' claim(s) on historical trends
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**TCAP US History: End of Course
Range Performance Level Descriptors**

<p style="text-align: center;">United States Policy Between the Wars, World War II, and the Cold War</p>	<p style="text-align: center;">US.54 to US.81</p>	<p>Performance at this level demonstrates that the student has a minimal understanding of United States Policy between the Wars, World War II, and the Cold War. Students at this level are able to:</p> <ul style="list-style-type: none"> • list new political ideologies • recall American foreign policies • define the roles of minorities during wartime • identify the effect of technological advances on warfare • Identify the causes and key leaders of the conflicts of the era • reproduce or list information from a primary/secondary source, informational text or prior 	<p>Performance at this level - demonstrates that the student is approaching understanding of United States Policy between the Wars, World War II, and the Cold War. Students at this level are able to:</p> <ul style="list-style-type: none"> • recognize new political ideologies • identify changes in American foreign policy • summarize the changing roles of minorities and women during wartime • observe the effect of technological advances on warfare • explain the causes, effects, and key leaders of the conflicts of the era • examine themes across time • summarize information from either a primary/secondary source, informational text, and/or prior knowledge in order to explore historical events 	<p>Performance at this level - demonstrates that the student has a comprehensive understanding of United States Policy between the Wars, World War II, and the Cold War. Students at this level are able to:</p> <ul style="list-style-type: none"> • trace and explain the development of new political ideologies • examine the origins of the change in American foreign policies and global cooperation • investigate the social implications of the era including the changing roles of minorities and women during wartime • explain the technological advances and their impact on warfare • discuss the causes, courses, key leaders, and effects of the conflicts of the era • investigate regional themes across time • analyze primary/secondary 	<p>Performance at this level demonstrates that the student has an extensive understanding of United States Policy between the Wars, World War II, and the Cold War. Students at this level are able to:</p> <ul style="list-style-type: none"> • evaluate the impact of new political ideologies • synthesize the changes in American foreign policies and global cooperation • analyze the social implications of the era including the changing roles of minorities and women during wartime • draw conclusions about the technological advances and their impact on warfare • integrate the causes, courses,
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**TCAP US History: End of Course
Range Performance Level Descriptors**

		knowledge in order to explore historical events		sources and other stimuli in order to explore historical trends	<p>key leaders, and effects of conflicts of the era in order to recognize historical significance</p> <ul style="list-style-type: none"> • integrate the causes, courses, politics, and key leaders of World War II and the Cold War in order to understand the historical significance. • integrate regional themes across time through extended writing • synthesize primary/secondary sources and other stimuli to draw conclusions and justify the students' claim(s) on historical trends
Post-War Years to Contemporary United States	US.82 to US.112	Performance at this level demonstrates that the student has a minimal	Performance at this level - demonstrates that the student is approaching understanding of the Post-	Performance at this level - demonstrates that the student has a comprehensive	Performance at this level demonstrates that the student has an extensive

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		<p>understanding of the Post-War Years to the Contemporary United States. Students at this level are able to:</p> <ul style="list-style-type: none"> • recall Presidential events of the Post-War and Contemporary era • list the events and leaders of the Civil Rights movement • define the changes in post-war American society • reproduce or list information from a primary/secondary source, informational text or prior knowledge in order to explore historical events 	<p>War Years to the Contemporary United States Students at this level are able to:</p> <ul style="list-style-type: none"> • identify Presidential events of the Post-War and Contemporary era • recognize the events, effects and key figures of the Civil Rights movement • summarize the reactions to changes in post-war American society • write about the impact of Tennessee on American culture (including Civil Rights) • examine themes across time • summarize information from either a primary/secondary source, informational text, and/or prior knowledge in order to explore historical events 	<p>understanding of the Post-War Years to the Contemporary United States. Students at this level are able to:</p> <ul style="list-style-type: none"> • compare and contrast Presidential events, achievements, and scandals of the Post-War and Contemporary era • trace the development, events, effects and key figures of the Civil Rights movement • discuss the outcomes of changes in post-war American society • examine the impact of Tennessee on American culture (including Civil Rights) • investigate regional themes across time • analyze primary/secondary sources and other stimuli in order to explore historical trends 	<p>understanding of the Post-War Years to the Contemporary United States. Students at this level are able to:</p> <ul style="list-style-type: none"> • evaluate Presidential events, achievements, and scandals of the Post-War and Contemporary era • draw conclusions and justifying the development, events, effects, and key figures of the Civil Rights movement, emphasizing the major accomplishments and lasting impact(s) • reflect on the ramifications of changes in post-war American society, including culture, population shifts, and activism
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**TCAP US History: End of Course
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					<ul style="list-style-type: none">• analyze the impact of Tennessee on American culture (including Civil Rights)• integrate the causes, courses, politics, and key leaders of the Post-War and Contemporary Era in order to understand the historical significance.• integrate regional themes across time through extended writing• synthesize primary/secondary sources and other stimuli to draw conclusions and justify the students' claim(s) on historical trends
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TCAP: TNReady
Range Performance Level Descriptors

Algebra I					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Algebra I: Structures and Operations	N-RN.B.3 N-Q.A.1 N-Q.A.2 N-Q.A.3 A-SSE.A.1 A-SSE.A.2 A-SSE.B.3 A-APR.A.1 A-APR.B.3	<p>Performance at this level demonstrates the student has a <i>minimal</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • recognize algebraic expressions and identify parts of linear, quadratic, and exponential expressions • perform operations on rational and irrational numbers • identify zeros of polynomials given a graph • perform addition with linear expressions 	<p>Performance at this level demonstrates the student has a <i>basic</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply linear, quadratic and exponential expressions to solve mathematical problems • perform operations on algebraic expressions that include rational and irrational numbers • construct a graph of a linear function and identify its zeros • perform addition and subtraction with linear expressions 	<p>Performance at this level demonstrates the student has a <i>comprehensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply linear, quadratic, and exponential expressions and their equivalents to mathematical problems • apply algebraic expressions containing both rational and irrational numbers to solve mathematical and real-world problems • identify zeros of quadratic and cubic polynomials and use the zeros to graph the function • perform addition, subtraction, and 	<p>Performance at this level demonstrates the student has an <i>extensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply and explain the use of linear, quadratic, and exponential expressions and their equivalents to solve mathematical and real-world problems • construct and explain solutions for mathematical and real-world problems using algebraic expressions containing both rational and irrational numbers • determine and use the zeros of polynomial functions to sketch its graph and explain the significance of the zeros • explain and show that polynomials are closed under addition,

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Algebra I					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
				multiplication on polynomials	subtraction, and multiplication
Algebra I: Equations and Inequalities	A-CED.A.1 A-CED.A.2 A-CED.A.3 A-CED.A.4 A-REI.A.1 A-REI.B.3 A-REI.B.4 A-REI.C.5 A-REI.C.6 A-REI.D.10 A-REI.D.11 A-REI.D.12	<p>Performance at this level demonstrates the student has a <i>minimal</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • verify a solution to a linear and quadratic equation and inequality; identify the solution to a system of linear equations from a graph • identify linear, exponential, and quadratic equations 	<p>Performance at this level demonstrates the student has a <i>basic</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve one- and two-step linear equations and inequalities; algebraically verify the solution of a system of equations in 2 variables given the solution • solve quadratic equations in the form $x^2 = c$ by taking the square root to result in real number solutions; 	<p>Performance at this level demonstrates the student has a <i>comprehensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create, solve, and graph mathematical and real-world problems with linear equations and inequalities, quadratic equations, and linear systems of equations and inequalities (with or without the use of technology) • solve and interpret quadratic equations in one variable using multiple methods and recognize cases where a quadratic has no real solutions 	<p>Performance at this level demonstrates the student has an <i>extensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create, solve, graph, and explain solutions of mathematical and real-world problems with linear equations and inequalities, quadratic equations, and linear systems of equations and inequalities (with or without the use of technology) • solve and interpret quadratic equations using multiple methods in one variable and analyze without solving if the

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Algebra I					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
		<ul style="list-style-type: none"> • solve linear equations and graph using technology 	solve linear, and absolute value equations and graph using technology <ul style="list-style-type: none"> • solve linear and absolute value equations and graph using technology 	<ul style="list-style-type: none"> • solve linear, polynomial, rational, and absolute value equations; approximate solutions of polynomial functions using technology to graph the functions, make tables of values, or find successive approximations 	quadratic has no real solution <ul style="list-style-type: none"> • represent and solve linear, polynomial, rational, and absolute value equations; approximate solutions of polynomial functions using technology to graph the functions, make tables of values, or find successive approximations
Algebra I: Functions and Interpreting Data	F-BF.A.1 F-BF.B.3 F-LE.A.1 F-LE.A.2 F-LE.A.3 F-LE.A.5 F-IF.A.1 F-IF.A.2 F-IF.A.3 F-IF.B.4 F-IF.B.5 F-IF.B.6 F-IF.C.7 F-IF.C.8 F-IF.C.9 S-ID.A.1 S-ID.A.2 S-ID.A.3 S-ID.B.5 S-ID.B.6 S-ID.C.7	Performance at this level demonstrates the student has a <i>minimal</i> understanding of Functions and Interpreting Data. Students performing at this level are able to: <ul style="list-style-type: none"> • identify functions and key features <ul style="list-style-type: none"> • represent data in graphical representations 	Performance at this level demonstrates the student has a <i>basic</i> understanding of Functions and Interpreting Data. Students performing at this level are able to: <ul style="list-style-type: none"> • identify and interpret functions and key features <ul style="list-style-type: none"> • represent and interpret data in multiple graphical representations 	Performance at this level demonstrates the student has a <i>comprehensive</i> understanding of Functions and Interpreting Data. Students performing at this level are able to: <ul style="list-style-type: none"> • identify and interpret functions by creating multiple representations, including key features; use key features in contextual situations <ul style="list-style-type: none"> • represent, interpret, and use data in multiple graphical representations 	Performance at this level demonstrates the student has an <i>extensive</i> understanding of Functions and Interpreting Data. Students performing at this level are able to: <ul style="list-style-type: none"> • identify, interpret, and analyze functions by creating multiple representations, including key features; use key features in contextual situations <ul style="list-style-type: none"> • represent, interpret, analyze, and use data in multiple graphical representations

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Algebra I					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
	S-ID.C.8 S-ID.C.9	<ul style="list-style-type: none"> • fit a function to data 	<ul style="list-style-type: none"> • fit a function to data (linear, quadratic, or exponential) and calculate the correlation coefficient using technology in mathematical problems 	<ul style="list-style-type: none"> • fit a function to data (linear, quadratic, or exponential) and analyze the data to calculate the correlation coefficient using technology in mathematical and real-world problems 	<ul style="list-style-type: none"> • fit a function to data (linear, quadratic, or exponential) and analyze the data to calculate and interpret the correlation coefficient using technology in mathematical and real-world problems

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Algebra II: Structures and Operations	N-RN.A.1 N-RN.A.2 N-Q.A.2 N-CN.A.1 N-CN.A.2 A-SSE.A.2 A-SSE.B.3 A-SSE.B.4 A-APR.B.2 A-APR.B.3 A-APR.C.4 A-APR.D.6	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • simplify numerical radicals • calculate sums of complex numbers • substitute numerical values for variables to verify that two expressions are equivalent 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • rewrite and simplify a numerical expression containing radicals or rational exponents • calculate products of complex numbers • rewrite polynomial and exponential expressions in different but equivalent forms 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • rewrite and simplify algebraic expressions involving radical and rational exponents • calculate expressions containing sums and products of complex numbers • use the properties of exponents to write an equivalent form of an exponential function and interpret the parts of the expression 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • compare and interpret expressions involving radicals and rational exponents and explain why two algebraic expressions containing radicals and rational exponents are equal • calculate expressions containing sums and products of complex numbers and write answers in a + bi form • rewrite polynomial, rational, and exponential expressions in different but equivalent forms to find a function to solve mathematical and real-world problems

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
		<ul style="list-style-type: none"> • identify the first term and common ratio of a geometric sequence 	<ul style="list-style-type: none"> • list the terms of a geometric series given in summation notation 	<ul style="list-style-type: none"> • apply the geometric series summation formula to a geometric sequence 	<ul style="list-style-type: none"> • use geometric series summation formula to solve real-world problems
Algebra II: Structures and Operations (cont.)	N-RN.A.1 N-RN.A.2 N-Q.A.2 N-CN.A.1 N-CN.A.2 A-SSE.A.2 A-SSE.B.3 A-SSE.B.4 A-APR.B.2 A-APR.B.3 A-APR.C.4 A-APR.D.6	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify zeros of polynomial functions given in factored form • determine the remainder of $P(x)$ by evaluating $P(a)$ • identify equivalent forms of a rational expression 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify zeros of quadratic polynomials • apply the Remainder Theorem to determine if $(x - a)$ is a factor of $P(x)$ • determine equivalent forms of a rational expression for factorable expressions 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify zeros of quadratic, cubic, and quartic polynomials and use the zeros to graph • apply the Remainder Theorem to determine the remainder on division by $(x - a)$ and if $(x - a)$ is a factor of $P(x)$ • determine equivalent forms of a rational expressions by inspection 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify zeros of quadratic, cubic, and quartic polynomials for which equations are not provided and use the zeros to graph • apply the Remainder Theorem to determine the remainder on division by $(bx - a)$ and if $(bx - a)$ is a factor of $P(x)$ • determine equivalent forms of a rational expressions using long division

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Algebra II: Equations and Inequalities	N-CN.B.7 A-CED.A.1 A-REI.A.1 A-REI.A.2 A-REI.B.4 A-REI.C.6 A-REI.C.7 A-REI.D.11 G-GPE.A.2	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create and solve linear equations • algebraically verify the solution of a given system of linear equations 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create and solve linear and quadratic equations with both real and imaginary solutions • solve systems of equations to find points of intersection(s) for linear functions 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create and solve linear, quadratic, exponential, radical, and rational equations with both real and imaginary solutions • solve systems of equations to find points of intersection(s) for linear and non-linear relations algebraically and graphically 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create and solve quadratic, exponential, radical, and rational equations with both real and imaginary solutions including recognizing extraneous solutions • solve systems of equations to find points of intersection(s) for linear and non-linear relations algebraically and graphically and justify the advantages of one

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
		<ul style="list-style-type: none"> • solve linear equations and approximate solutions using technology 	<ul style="list-style-type: none"> • solve linear, absolute value, and exponential equations and approximate solutions using technology to graph the functions 	<ul style="list-style-type: none"> • solve linear, polynomial, rational, absolute value, exponential, and logarithmic equations and approximate solutions using technology to graph the functions, make tables of values, or find successive approximations 	<p>particular method over another</p> <ul style="list-style-type: none"> • represent and solve linear, polynomial, rational, absolute value, exponential, and logarithmic equations and approximate solutions using technology to graph the functions, make tables of values, or find successive approximations
Algebra II: Equations and Inequalities (cont.)	N-CN.B.7 A-CED.A.1 A-REI.A.1 A-REI.A.2 A-REI.B.4 A-REI.C.6 A-REI.C.7 A-REI.D.11 G-GPE.A.2	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify a complex solution • identify the vertex of a parabola given the equation in vertex form 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • determine if a quadratic equation has complex solutions • identify the focus and directrix of a parabola given the graph of the parabola 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve quadratic equations to find complex solutions in the form $a + bi$ • identify the focus and directrix of a parabola given the equation in any form 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve quadratic equations to find complex solutions in the form $a + bi$ and justify non-real solutions graphically • derive equivalent equations for a parabola given its focus and its directrix

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Algebra II: Functions	F-IF.A.3 F-IF.B.4 F-IF.B.6 F-IF.C.7 F-IF.C.8 F-IF.C.9 F-BF.A.1 F-BF.A.2 F-BF.B.3 F-BF.B.4 F-LE.A.2 F-LE.B.4 F-LE.B.5 F-TF.A.1 F-TF.A.2 F-TF.B.5	Performance at this level indicates that the student displays a <i>minimal</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • identify key features of polynomial, exponential, trigonometric, and logarithmic graphs given the graph 	Performance at this level indicates that the student displays a <i>basic</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • create and identify key features polynomial, exponential, trigonometric, and logarithmic graphs using technology 	Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • interpret and analyze functions, in function notation, in mathematical and real-world problems 	Performance at this level indicates that the student displays an <i>extensive</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • interpret and analyze functions, in function notation, in mathematical and real-world problems using algebraic, graphical, numerical, and verbal representations

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
	F-TF.C.8	<ul style="list-style-type: none"> • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ • recognize that an inverse of a linear function is formed by interchanging the domain and the range • identify a sequence represented by an explicit formula 	<ul style="list-style-type: none"> • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ and find the value of k given the graph • find the inverse of a linear function • identify a sequence represented recursively 	<ul style="list-style-type: none"> • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$, find the value of k given the graph; identify even and odd functions • determine whether two non-linear functions are inverses of each other • write sequences as an explicit formula 	<ul style="list-style-type: none"> • justify algebraically if a function is even or odd • find the inverse of a non-linear function algebraically and graphically • write arithmetic and geometric sequences both recursively and as an explicit formula and use in real-world problems
Algebra II: Functions (cont.)	F-IF.A.3 F-IF.B.4 F-IF.B.6 F-IF.C.7 F-IF.C.8 F-IF.C.9 F-BF.A.1 F-BF.A.2 F-BF.B.3 F-BF.B.4 F-LE.A.2 F-LE.B.4 F-LE.B.5	Performance at this level indicates that the student displays a <i>minimal</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • calculate angle measures, in degrees, and the three basic trigonometric ratios (sin, 	Performance at this level indicates that the student displays a <i>basic</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • determine angle measures, in degrees and radians, and the three basic trigonometric ratios 	Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • use the unit circle; model periodic phenomena using trigonometric functions 	Performance at this level indicates that the student displays an <i>extensive</i> understanding of Equations and Inequalities. Students performing at this level are able to: <ul style="list-style-type: none"> • use the unit circle, model periodic phenomena, and prove identities as they

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
	F-TF.A.1 F-TF.A.2 F-TF.B.5 F-TF.C.8	cos, tan); identify amplitude given a trigonometric model • identify a linear and exponential function given a graph or table	(sin, cos, tan); given a graph, identify which trigonometric function is being modeled • identify a linear and exponential function given multiple representations	• construct and identify a linear and exponential function that models a real-world problem given multiple representations	relate to trigonometric functions • construct and apply a linear and exponential function that models a real world problem given multiple representations
Algebra II: Interpreting Data	S.ID.A.4 S-ID.B.6 S-IC.A.1 S-IC.A.2 S-IC.B.3 S-IC.B.4 S-IC.B.5 S-IC.B.6 S-CP.A.1	Performance at this level indicates that the student displays a <i>minimal</i> understanding of Interpreting Data. Students performing at this level are able to:	Performance at this level indicates that the student displays a <i>basic</i> understanding of Interpreting Data. Students performing at this level are able to:	Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Interpreting Data. Students performing at this level are able to:	Performance at this level indicates that the student displays an <i>extensive</i> understanding of Interpreting Data. Students performing at this level are able to:

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Algebra II					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
	S-CP.A.2 S-CP.A.3 S-CP.A.4 S-CP.A.5 S-CP.B.6 S-CP.B.7	<ul style="list-style-type: none"> • identify how randomization affects a sample • identify whether data sets are approximately normal or skewed • fit an exponential function to data • calculate relative frequencies given a two-way table • list the sample space of probability experiment 	<ul style="list-style-type: none"> • identify which method of data collection is appropriate to a given real-world problem • sketch a normal distribution curve given the mean and standard deviation of a data set • fit an exponential function to data and calculate the correlation coefficient using technology in mathematical situations • calculate probabilities given a two-way table • identify subsets of sample space 	<ul style="list-style-type: none"> • evaluate statistical data to make inferences about a population • use normal curve models to analyze data • fit an exponential and trigonometric function to data and analyze the data to calculate the correlation coefficient using technology in mathematical and real-world situations • interpret two-way tables, using calculated probabilities in real-world problems • determine when probabilistic events are dependent or independent 	<ul style="list-style-type: none"> • use and evaluate statistical data to make inferences about a population • select and apply appropriate models (normal curve or regression) given univariate or bivariate data • fit an exponential and trigonometric function to data and analyze the data to calculate and interpret the correlation coefficient using technology in mathematical and real-world situations • construct and interpret two-way tables, using calculated probabilities in real-world problems • analyze when probabilistic events are dependent or independent

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Geometry					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Geometry: Congruence	G-CO.A.1 G-CO.A.2 G-CO.A.3 G-CO.A.4 G-CO.A.5 G-CO.B.6 G-CO.B.7 G-CO.B.8 G-CO.C.9 G-CO.C.10 G-CO.C.11 G-CO.D.12 G-CO.D.13	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Congruence. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify the relationship between rigid motions • list geometric statements pertaining to given geometric information • construct line segments 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Congruence. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify the relationship between rigid motions and congruency • use congruency to prove statements about triangles, lines, and angles • construct rays, triangles, and angles 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Congruence. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • describe the relationship between rigid motions and congruency • use congruency to prove statements about triangles, parallelograms, lines, and angles • construct basic formal geometric constructions such as but not limited to: copy a segment, bisect a segment, and bisect an angle 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Congruence. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • describe with precise language the relationship between rigid motions and congruency • use congruency to prove theorems about triangles, parallelograms, lines, and angles • construct formal geometric constructions using appropriate tools

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Geometry					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Geometry: Triangles and Circles	G-SRT.A.1 G-SRT.A.2 G-SRT.A.3 G-SRT.B.4 G-SRT.B.5 G-SRT.C.6 G-SRT.C.7 G-SRT.C.8 G-C.A.1 G-C.A.2 G-C.A.3 G-C.B.5 G-GPE.A.1	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Triangles and Circles. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • distinguish between a dilation and a translation, reflection, or rotation • sketch and label the sides of right triangles • identify inscribed angles, radii, and chords • write an expression and calculate the area of a circle given the radius 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Triangles and Circles. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify a sequence of similarity transformations • sketch, label, and identify the trigonometric ratios of a right triangle • identify and describe relationships among inscribed angles, radii, and chords • determine the area of a quarter, half, or three-quarter circle, given the radius of the entire circle 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Triangles and Circles. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • describe a sequence of similarity transformations to determine the similarity of figures • use the Pythagorean Theorem, trigonometric ratios, and the relationship between sine and cosine of complementary angles to solve mathematical problems • construct the circumscribed circle for a given triangle • apply formulas for arc length and area of a sector 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Triangles and Circles. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use precise language to describe a sequence of similarity transformations to determine the similarity of figures • use the Pythagorean Theorem, trigonometric ratios, and the relationship between sine and cosine of complementary angles to solve mathematical and real-world problems • construct the inscribed and circumscribed circle for a given triangle and justify the construction • derive the formula for arc length and area of a sector

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Geometry					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
		<ul style="list-style-type: none"> graph the equation of a circle in standard form 	<ul style="list-style-type: none"> identify the center and radius of a circle given the equation in standard form 	<ul style="list-style-type: none"> identify the center and radius of a circle by completing the square on its given equation 	<ul style="list-style-type: none"> use the Pythagorean Theorem to derive the equation of a circle
Geometry: Two- and Three- Dimensional Geometry	G-GMD.A.1 G-GMD.A.3 G-GMD.B.4 G-MG.A.1 G-MG.A.2	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Two and Three Dimensional Geometry. Students performing at this level are able to:</p> <ul style="list-style-type: none"> calculate volume of a regular prism with integer dimensions identify geometric shapes identify the shape of the base of a rectangular prism, triangular prism, or cylinder 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Two and Three Dimensional Geometry. Students performing at this level are able to:</p> <ul style="list-style-type: none"> calculate volume for cylinders, cones, and spheres use geometric shapes to describe objects in real-world problems identify two-dimensional cross-sections that results from slicing a right rectangular prism or a right rectangular pyramid 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Two and Three Dimensional Geometry. Students performing at this level are able to:</p> <ul style="list-style-type: none"> use volume formulas to solve real-world problems use geometric shapes and their properties to describe objects in real-world problems describe the two-dimensional cross-sections of three-dimensional objects and describe and identify three-dimensional objects generated by rotations of two-dimensional objects 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Two and Three Dimensional Geometry. Students performing at this level are able to:</p> <ul style="list-style-type: none"> apply concepts of density based on area and volume in real-world problems use geometric shapes, their measures, and their properties to describe objects in real-world problems describe the similarities and differences between various cross-sections of three-dimensional objects and rotations of a two-dimensional objects

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Geometry					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
Geometry: Coordinate Geometry and Solving Design Problems	G-GPE.B.4 G-GPE.B.5 G-GPE.B.6 G-GPE.B.7 G-MG.A.3	<p>Performance at this level indicates that the student displays a <i>minimal</i> understanding of Coordinate Geometry and Solving Design Problems. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • determine the fourth coordinate of a rectangle given three coordinates • identify lines with positive and negative slopes • locate the midpoint of a horizontal or vertical line segment in a plane 	<p>Performance at this level indicates that the student displays a <i>basic</i> understanding of Coordinate Geometry and Solving Design Problems. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use numerical coordinates to partially prove a geometric statement • identify the slope of a line given its equation • identify the coordinates of the midpoint of a line segment 	<p>Performance at this level indicates that the student displays a <i>comprehensive</i> understanding of Coordinate Geometry and Solving Design Problems. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use coordinates to prove a specific geometric statement • identify the equations of lines as parallel, perpendicular, or neither • identify the whole number coordinates of a point that divides a segment into a given ratio 	<p>Performance at this level indicates that the student displays an <i>extensive</i> understanding of Coordinate Geometry and Solving Design Problems. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use coordinates to prove or disprove a geometric theorem • use the slope criteria for parallel and perpendicular lines to solve geometric problems • identify the rational coordinates of a point that divides a segment into a given ratio

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Geometry					
Sub-score Categories	Standards in the Sub-Score Category	Level 1	Level 2	Level 3	Level 4
		<ul style="list-style-type: none">• identify the whole number coordinates of triangles and rectangles	<ul style="list-style-type: none">• use coordinates to compute perimeters of polygons and areas of triangles and rectangles with integer lengths	<ul style="list-style-type: none">• use coordinates to compute perimeters of polygons and areas of triangles and rectangles with rational lengths	<ul style="list-style-type: none">• use coordinates to compute perimeters and areas of compound figures

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Integrated Math I					
Reporting Category	Standards in the Reporting Category	Level 1	Level 2	Level 3	Level 4
Integrated Math 1: Structures and Operations	N-Q.A.1, N-Q.A.2, N-Q.A.3, A-SSE.A.1, A-SSE.A.3	<p>Performance at this level indicates that the student displays a minimal understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify parts of linear or exponential expressions • recognize algebraic expressions 	<p>Performance at this level indicates that the student displays a basic understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • interpret parts of linear or exponential expression in context • perform operations on algebraic or numerical expressions 	<p>Performance at this level indicates that the student displays a comprehensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply linear or exponential expressions and their equivalents to mathematical situations using appropriate units • apply algebraic or numerical expressions to solve real-world and mathematical situations 	<p>Performance at this level indicates that the student displays an extensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply and explain the use of numerical or algebraic linear or exponential expressions and their equivalents to solve mathematical and real-world situations using appropriate units • construct and explain solutions for real-world and mathematical situations using algebraic or

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					numerical expressions
Integrated Math 1: Equations and Inequalities	A-REI.B.3, A-REI.C.5, A-REI.C.6, A-REI.D.10, A-REI.D.11, A-REI.D.12, A-CED.A.1, A-CED.A.2, A-CED.A.3, A-CED.A.4	<p>Performance at this level indicates that the student displays a minimal understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • verify a solution to a linear equation and inequality and identify the solution to a system of linear equations from a graph. • algebraically verify the solution given a system of linear equations 	<p>Performance at this level indicates that the student displays a basic understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve one –and two-step linear equations and inequalities and algebraically verify the solution of a system of equations in two variables given the solution • solve systems of equations exactly to find points of intersection(s) for linear functions 	<p>Performance at this level indicates that the student displays a comprehensive understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create, solve, and graph mathematical and real-world situations with linear equations and inequalities and systems of linear equations and inequalities (with or without the use of technology) • solve systems of equations to find points of intersection(s) for linear relations algebraically and graphically and 	<p>Performance at this level indicates that the student displays an extensive understanding of Equations and Inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • create, solve, graph, and explain solutions of mathematical and real-world situations with linear inequalities and linear systems of equations or inequalities (with or without the use of technology) • represent and solve systems of polynomial equations approximately using technology to graph the functions; represent and solve systems of linear,

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				polynomial relations graphically	absolute value or rational functions by making tables of values or by finding successive approximations
Integrated Math 1: Functions	F-IF.A.1, F-IF.A.2, F-IF.A.3, F-IF.B.4, F-IF.B.5, F-IF.B.6, F-IF.C.7, F-IF.C.9, F-BF.A.1, F-BF.A.2, F-LE.A.1, F-LE.A.2, F-LE.A.3, F-LE.B.5	<p>Performance at this level indicates that the student displays a minimal understanding of Functions. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify functions and key features • represent data in graphic representations • identify a sequence as represented by an explicit formula • identify a linear and exponential function given a graph or table 	<p>Performance at this level indicates that the student displays a basic understanding of Functions. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify and interpret functions and key features • represent and interpret data in multiple graphic representations • identify a sequence as represented recursively • identify a linear and exponential function from any representation 	<p>Performance at this level indicates that the student displays a comprehensive understanding of Functions. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify and interpret functions by creating any representation(s), including key features and the use key features in contextual situations • represent, interpret, and use data in multiple graphic representations • write sequences as an explicit formula • construct and identify a linear and 	<p>Performance at this level indicates that the student displays an extensive understanding of Functions. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify, interpret and analyze functions by creating any representation(s), including key features and use key features in contextual situations • represent, interpret, analyze and use data in multiple graphic representations • write arithmetic and geometric sequences both recursively and with an explicit

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				exponential function that models a real world problem from any representation(s)	formula and use in real world problems • construct and apply a linear and exponential function that models a real world problem from any representation(s)
Integrated Math 1: Geometry and Interpreting Data	S-ID.A.1, S-ID.A.2, S-ID.A.3, S-ID.B.5, S-ID.B.6, S-ID.C.7, S-ID.C.8, S-ID.C.9, G-CO.A.1, G-CO.A.2, G-CO.A.3, G-CO.A.4, G-CO.A.5, G-CO.B.6, G-CO.B.7, G-CO.B.8, G-CO.C.9, G-CO.C.10, G-CO.C.11	Performance at this level indicates that the student displays a minimal understanding of Geometry and Interpreting Data. Students performing at this level are able to: • identify rigid motions • list geometric statements pertaining to given geometric information • fit function to data	Performance at this level indicates that the student displays a basic understanding of Geometry and Interpreting Data. Students performing at this level are able to: • identify the relationship between rigid motions and congruence • use congruence to partially prove statements about triangles, lines and angles • fit a function to data (linear or exponential) and calculate the	Performance at this level indicates that the student displays a comprehensive understanding of Geometry and Interpreting Data. Students performing at this level are able to: • describe the relationship between rigid motions and congruence • use congruence to prove statements about triangles, parallelograms, lines and angles • fit a function to data (linear or exponential) and	Performance at this level indicates that the student displays an extensive understanding of Geometry and Interpreting Data. Students performing at this level are able to: • describe with precise language the relationship between rigid motions and congruence • use congruence to prove theorems about triangles, parallelograms, lines and angles • fit a function to data (linear or

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			correlation coefficient using technology in mathematical situations	analyze the data to calculate the correlation coefficient using technology in mathematical and real world situations	exponential) and analyze the data to calculate and interpret the correlation coefficient using technology in mathematical and real world situations
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Integrated Math II					
Reporting Category	Standards in the Reporting Category	Level 1	Level 2	Level 3	Level 4
Integrated Math 2: Structures and Operations	N-RN.A.1, N-RN.A.2, N-RN.B.3, N-CN.A.1, N-CN.A.2, N-Q.A.2, A-SSE.A.1, A-SSE.A.2, A-SSE.B.3, A-APR.A.1	<p>Performance at this level demonstrates that the student has a minimal understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify parts of quadratic or exponential expressions • recognize algebraic expressions • simplify numerical radical expressions • calculate sums of complex numbers • perform addition with linear expressions 	<p>Performance at this level demonstrates that the student is approaching understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply quadratic and exponential expressions to solve mathematical situations • perform operations on algebraic expressions with rational and irrational numbers • rewrite and simplify a numerical expression containing radicals or rational exponents • calculate sums and differences of complex numbers • perform addition and subtraction with linear expressions 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply quadratic and exponential expressions and their equivalents to mathematical situations using appropriate units • apply algebraic expressions to solve real-world and mathematical situations with rational and irrational numbers • rewrite and simplify expressions involving radical and rational exponents • calculate sums and products of complex numbers • perform addition, subtraction, and multiplication with polynomial expressions 	<p>Performance at this level demonstrates that the student has an extensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • apply and explain the use of quadratic and exponential expressions and their equivalents to solve mathematical and real-world situations using appropriate units • construct and explain solutions for real-world and mathematical situations using algebraic expressions with rational and irrational numbers • compare and interpret expressions involving radicals and rational exponents and explain why two algebraic expression containing radicals and rational exponents are equal • calculate expressions containing sums and products of complex numbers and write answers in a + bi form

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					<ul style="list-style-type: none"> • explain and show that polynomials are closed under addition, subtraction, and multiplication
Integrated Math 2: Equations	N-CN.B.7, A-CED.A.1, A-CED.A.2, A-CED.A.4, A-REI.A.1, A-REI.B.4, A-REI.C.7	<p>Performance at this level demonstrates that the student has a minimal understanding of Equations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify a complex solution • solve quadratic equations with real solutions • recognize when the quadratic formula gives complex solutions 	<p>Performance at this level demonstrates that the student is approaching understanding of Equations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • determine if a quadratic equation has complex solutions • solve quadratic equations with complex solutions • solve quadratic equations in the form $x^2 = c$ (or similar $x^2 - c = 0$ prior) by taking the square root 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Equations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve quadratic equations to find complex solutions in the form $a + bi$ • create and solve quadratic equations with real solutions • solve exponential equations • solve quadratic equations in one variable using multiple methods 	<p>Performance at this level demonstrates that the student has an extensive understanding of Equations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • solve quadratic equations to find complex solutions in the form $a + bi$ and justify non-real solutions graphically • create and solve quadratic equations with both real and complex solutions • create and solve exponential equations • solve quadratic equations in one variable using multiple methods and recognize, without solving, if the quadratic has no real solution
Integrated Math 2: Functions	F-IF.B.4, F-IF.B.5, F-IF.B.6, F-IF.C.7, F-IF.C.8, F-IF.C.9, F-BF.A.1,	<p>Performance at this level demonstrates that the student has a minimal understanding of Functions. Students performing at this level are able to:</p>	<p>Performance at this level demonstrates that the student is approaching understanding of Functions. Students performing at this level are able to:</p>	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Functions. Students</p>	<p>Performance at this level demonstrates that the student has an extensive understanding of Functions. Students performing at this level are able to:</p>

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	F-BF.A.3	<ul style="list-style-type: none"> • identify key features of quadratic and exponential functions from a graph • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, and $f(x + k)$ 	<ul style="list-style-type: none"> • identify key features of quadratic and exponential functions from a table or graph • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ and find the value of k given the graph 	<p>performing at this level are able to:</p> <ul style="list-style-type: none"> • identify, graph, and interpret quadratic and exponential functions from any representation, including key features, and the use key features in real world situations • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$, find the value of k given the graph, and identify even and odd functions 	<ul style="list-style-type: none"> • interpret, graph, and analyze quadratic and exponential functions in function notation, using different representations in mathematical and real world problems • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$, find the value of k, and justify algebraically if a function is even or odd or neither
Integrated Math 2: Geometry and Interpreting Data	G-SRT.A.1, G-SRT.A.2, G-SRT.A.3, G-SRT.B.4, G-SRT.B.5, G-SRT.C.6, G-SRT.C.7, G-SRT.C.8, G-GMD.A.1, G-GMD.A.3, S-ID.A.6, S-CP.A.1, S-CP.A.2, S-CP.A.3, S-CP.A.4, S-CP.A.5, S-CP.B.6, S-CP.B.7	<p>Performance at this level demonstrates that the student has a minimal understanding of Geometry and interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • distinguish between a dilation and a translation, reflection, or rotation • sketch and label the sides of right triangles • write an expression for and calculate the area of a circle given the radius • calculate volume for cylinders, cones, and spheres with integer dimensions • calculate relative frequencies given a two-way table • list the sample space of probability experiment 	<p>Performance at this level demonstrates that the student is approaching understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • identify a sequence of similarity transformations • sketch, label, and identify the trigonometric ratios of a right triangle • calculate volume for cylinders, cones, and spheres • calculate probabilities given a two-way table • identify subsets of sample space 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • describe a sequence of similarity transformations to determine the similarity of figures • use the Pythagorean Theorem, trigonometric ratios, and the relationship between sine and cosine of complementary angles to solve problems • use volume formulas to solve real world problems • interpret two-way tables, using calculated probabilities in real-world problems 	<p>Performance at this level demonstrates that the student has an extensive understanding of Geometry and interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use precise language to describe a sequence of similarity transformations to determine the similarity of figures • use the Pythagorean Theorem, trigonometric ratios, and the relationship between sine and cosine of complementary angles to solve mathematical and real world problems • apply concepts of area and volume in real world problems • construct and interpret two-way tables, using

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				<ul style="list-style-type: none">• determine when probabilistic events are dependent or independent	<p>calculated probabilities in real-world problems</p> <ul style="list-style-type: none">• analyze when probabilistic events are dependent or independent
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Integrated Math III					
Reporting Category	Standards in the Reporting Category	Level 1	Level 2	Level 3	Level 4
Structures and Operations	N-Q.A.2, A-SSE.A.2, A-SSE.B.4, A-APR.B.2, A-APR.B.3, A-APR.C.4, A-APR.D.6	<p>Performance at this level demonstrates that the student has a minimal understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • substitute numerical values for variables to verify that two expressions are equivalent • identify the zeros of a polynomial function given in factored form • determine the remainder of $P(x)$ by evaluating $P(a)$ • identify equivalent forms of a rational expression 	<p>Performance at this level demonstrates that the student is approaching understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • rewrite polynomial and rational expressions in different but equivalent forms • list the terms of a geometric series given in summation notation • identify the zeros of a polynomial function given in factored form and identify zeros of quadratic polynomials • apply the Remainder Theorem to 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • use the properties of exponents to write an equivalent form of an exponential function and interpret the parts of the expression • apply the geometric series formula to a geometric sequence • identify zeros of quadratic, cubic, and quartic polynomials and use the factors to graph • apply the Remainder Theorem to determine the 	<p>Performance at this level demonstrates that the student has an extensive understanding of Structures and Operations. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • rewrite polynomial and rational expressions in different but equivalent forms to find a function to solve mathematical and real world problems • use the geometric series formula to solve real world problems • identify zeros of quadratic, cubic, and quartic polynomials for which factors are

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			<p>determine if $(x-a)$ is a factor of $P(x)$</p> <ul style="list-style-type: none"> determine equivalent forms of a rational expression for factorable expressions 	<p>remainder on division by $(x - a)$ and if $(x - a)$ is a factor of $P(x)$</p> <ul style="list-style-type: none"> determine equivalent forms of a rational expression by inspection 	<p>not provided and use the factors to graph</p> <ul style="list-style-type: none"> apply the Remainder Theorem to determine the remainder on division by $(bx - a)$ and if $(bx - a)$ is a factor of $P(x)$ determine equivalent forms of a rational expression using long division
Equations and Inequalities	<p>A-CED.A.1, A-CED.A.2, A-REI.A.1, A-REI.A.2, A-REI.D.11, G-GPE.A.1, G-GPE.A.2, G-GPE.B.4, G-GPE.B.5, G-GPE.B.6, G-GPE.B.7</p>	<p>Performance at this level demonstrates that the student has a minimal understanding of Equations and inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> algebraically verify a solution for an exponential equation graph polynomial, rational, and exponential equations. (with the use of technology) 	<p>Performance at this level demonstrates that the student is approaching understanding of Equations and inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> create and solve exponential equations and inequalities create and graph polynomial and exponential equations (with or 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Equations and inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> create and solve exponential and rational equations and inequalities and use them to solve mathematical problems create and graph polynomial, rational, 	<p>Performance at this level demonstrates that the student has an extensive understanding of Equations and inequalities. Students performing at this level are able to:</p> <ul style="list-style-type: none"> create and solve exponential, radical and rational equations and inequalities including recognizing extraneous solutions and use them to solve mathematical

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		<ul style="list-style-type: none"> • solve linear equations and find the solutions approximately using technology • graph a circle given the equation of a circle in standard form • identify the vertex of a parabola given the equation in vertex form • given three coordinates of a rectangle, determine the fourth coordinate • identify lines with positive and negative slopes • locate the midpoint of a horizontal or vertical line in a plane • identify the whole number coordinates of triangles and rectangles. 	<p>without the use of technology)</p> <ul style="list-style-type: none"> • solve linear and exponential equations and find the solutions approximately using technology to graph the functions • identify the center and radius of a circle given the equation in standard form • identify the focus and directrix of a parabola given the graph of the parabola • use numerical coordinates to partially prove a geometric statement • Identify the slope of a line that is parallel or perpendicular to another • identify the coordinates of the midpoint of a line segment • use coordinates to compute perimeters of polygons and areas of triangles and 	<p>and exponential equations and explain solutions to solve mathematical problems.</p> <ul style="list-style-type: none"> • solve linear, polynomial, absolute value and exponential equations and find the solutions approximately using technology to graph the functions, make tables of values, or find successive approximations • given the equation of a circle in standard form, complete the square to obtain the center and radius • identify the focus and directrix of a parabola given the equation in any form • use coordinates to prove a specific geometric statement • identify pairs of equations of lines as parallel, perpendicular, or 	<p>and real world problems</p> <ul style="list-style-type: none"> • create and graph polynomial, rational, and exponential equations and explain solutions to solve mathematical and real world problems. (with or without the use of technology) • represent and solve linear, polynomial, rational, absolute value, exponential, and logarithmic equations approximately using technology to graph the functions, make tables of values, or find successive approximations • use the Pythagorean Theorem to derive the equation of a circle • derive equivalent equations for a parabola given its focus and its directrix
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			rectangles with integer lengths	neither by comparing slope <ul style="list-style-type: none"> • identify the whole number coordinates of a point that divides a segment into a given ratio • use coordinates to compute perimeters of polygons and areas of triangles and rectangles with rational lengths 	<ul style="list-style-type: none"> • use coordinates to prove or disprove a geometric theorem • use the slope criteria for a parallel and perpendicular lines to solve geometric problems • identify the rational coordinates of a point that divides a segment into a given ratio • use coordinates to compute perimeters and areas of compound figures
Functions	F-IF.B.4, F-IF.B.6, F-IF.C.7, F-IF.C.9, F-BF.B.3, F-BF.B.4, F-TF.A.1, F-TF.A.2, F-TF.B.5, F-TF.C.8	Performance at this level demonstrates that the student has a minimal understanding of Functions. Students performing at this level are able to: <ul style="list-style-type: none"> • identify key features of polynomial, logarithmic, and trigonometric, and graphs given the graph 	Performance at this level demonstrates that the student is approaching understanding of Functions. Students performing at this level are able to: <ul style="list-style-type: none"> • interpret polynomial, logarithmic, and trigonometric graphs using technology and identify key features 	Performance at this level demonstrates that the student has a comprehensive understanding of Functions. Students performing at this level are able to: <ul style="list-style-type: none"> • interpret and analyze polynomial, logarithmic, and trigonometric functions, in function notation, in 	Performance at this level demonstrates that the student has an extensive understanding of Functions. Students performing at this level are able to: <ul style="list-style-type: none"> • interpret and analyze polynomial, logarithmic, and trigonometric functions, in function notation, using different

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		<ul style="list-style-type: none"> • identify key features of polynomial, exponential, trigonometric, and logarithmic graphs given the graph • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, and $f(x + k)$ • calculate angle measures, in degrees, and the three basic trigonometric ratios and identify amplitude given a trigonometric model 	<ul style="list-style-type: none"> • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ and find the value of k given the graph • find the inverse of a linear function • determine angle measures, in degrees and radians, and the three basic trigonometric ratios (\sin, \cos, \tan) and given a graph, identify which trigonometric function is being modeled 	<p>mathematical and real world problems</p> <ul style="list-style-type: none"> • identify the effect on a graph of replacing $f(x)$ with $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$, find the value of k given the graph, and identify even and odd functions • find the inverse of a function • use the unit circle and model periodic phenomena as they relate to trigonometric functions 	<p>representations, which include algebraic, graphical, numerical, and verbal, in mathematical and real world problems</p> <ul style="list-style-type: none"> • justify algebraically if a function is even or odd • find the inverse of a function algebraically • use the unit circle, model periodic phenomena, and prove identities as they relate to trigonometric functions.
<p style="text-align: center;">Geometry and Interpreting Data</p>	<p>G-CO.D.12, G-CO.D.13, G-C.A.1, G-C.A.2, G-C.A.3, G-C.B.5, G-MG.A.1, G-MG.A.2, G-MG.A.3, G-GMD.B.4, S-ID.A.4, S-ID.B.6,</p>	<p>Performance at this level demonstrates that the student has a minimal understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • construct line segments 	<p>Performance at this level demonstrates that the student is approaching understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • construct rays, triangles, and angles 	<p>Performance at this level demonstrates that the student has a comprehensive understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • construct basic formal geometric 	<p>Performance at this level demonstrates that the student has an extensive understanding of Geometry and Interpreting Data. Students performing at this level are able to:</p> <ul style="list-style-type: none"> • construct formal geometric

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	<p>S-IC.A.1, S-IC.A.2, S-IC.B.3, S-IC.B.4, S-IC.B.5, S-IC.B.6</p>	<ul style="list-style-type: none"> •write an expression and calculate the area of a circle given the radius •identify geometric shapes • fit an exponential function to data • calculate relative frequencies given a two-way table • list the sample space of probability experiment 	<ul style="list-style-type: none"> •determine the area of a quarter, half, or three-quarter circle, given the area of the entire circle •use geometric shapes to describe objects in real world problems • identify two-dimensional cross sections that results from slicing a right rectangular prism or a right rectangular pyramid • fit an exponential function to data and calculate the correlation coefficient using technology in mathematical situations • calculate probabilities given a two-way table • identify subsets of sample space 	<p>constructions such as but not limited to: copy a segment, bisecting a segment, bisecting an angle</p> <ul style="list-style-type: none"> • construct the circumscribed circle for a given triangle •use geometric shapes and their properties to describe objects in real world problems • describe the two-dimensional cross sections of three dimensional objects and describe and identify three dimensional objects generated by rotations of two dimensional objects • fit an exponential function to data and analyze the data to calculate the correlation coefficient using technology in mathematical and real world situations • determine when probabilistic events 	<p>constructions using appropriate tools.</p> <ul style="list-style-type: none"> •construct the inscribed and circumscribed circle for a given triangle and justify the construction • apply concepts of density based on area and volume in real world problems • use geometric shapes, their measures, and their properties to describe objects in real world problems • describe the similarities and differences between various cross-sections of three-dimensional objects and rotations of a two-dimensional objects • fit an exponential function to data and analyze the data to calculate and interpret the correlation coefficient using technology in
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				are dependent or independent • interpret two-way tables, the calculation of probabilities, and their use in real-world problems	mathematical and real world situation • analyze when probabilistic events are dependent or independent • construct and interpret two-way tables, the calculation of probabilities, and their use in real-world problems
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