KENAI PENINSULA BOROUGH SCHOOL DISTRICT

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SCHOOL BOARD COMMUNICATION

Title:	**K-6 Performance Based Writing Curriculum** **7-12 Performance Based Technology Curriculum Revision** **7-12 Performance Based Math Curriculum**		
Date:	**9/1/11**	**Item Number:**	10a.(1)
Administrator:	**Sean Dusek, Assistant Superintendent** Sean Dusek		
Attachments:	**K-6 Performance Based Writing Curriculum** **7-12 Performance Based Technology Curriculum Revision** **7-12 Performance Based Math Curriculum**		

[x] **Action Needed** [ ] **For Discussion** [ ] **Information** [ ] **Other:** _____

BACKGROUND INFORMATION

On August 8, 2011, the Board had a worksession to discuss the newly developed grades K-6 Performance Based writing curriculum, the revised grades 7-12 Performance Based technology curriculum, and the revised grades 7-12 Performance Based math curriculum. River City Academy plans to utilize these curriculums this year.

ADMINISTRATIVE RECOMMENDATION

The administration now recommends adopting the attached curriculum.

KENAI PENINSULA BOROUGH SCHOOL DISTRICT
Elementary Writing Standards (August 2011)

		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Written Presentation (PR)	**.01**	Write first and last name with initial capitals and lowercase letters					
	.02	Write upper and lowercase letters and numbers with correct formation	Write upper and lowercase letters and numbers with correct formation	Write upper and lowercase letters and numbers with correct formation	Write upper and lowercase letters and numbers with correct cursive formation	Write upper and lowercase letters and numbers with correct cursive formation	
	.03	Use correct spacing	Use correct spacing and margins	Use correct spacing and margins	Use correct spacing and margins in cursive writing	Use correct spacing and margins in cursive writing	
	.04		Write using a word processor	Write using a word processor	Write using a word processor	Write using a word processor	Write using a word processor

			Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Writing Process (WP)	**Variety of forms and structure**	**.01**	SENTENCE FLUENCY: Write complete sentences with a subject and predicate	SENTENCE FLUENCY: Write a variety of complete sentences with a subject and predicate	SENTENCE FLUENCY: Write a variety of complete sentences with compound subjects or predicates	SENTENCE FLUENCY: Write a variety of simple and complex sentences	SENTENCE FLUENCY: Write a variety of simple and complex sentences	SENTENCE FLUENCY: Write a variety of simple and complex sentences
		.02	ORGANIZATION: Write about a topic using drawings and writing	ORGANIZATION: Write a simple paragraph	ORGANIZATION: Write a complete and focused paragraph	ORGANIZATION: Write multiple paragraphs on a single topic	ORGANIZATION: Write multiple paragraphs on a single topic	ORGANIZATION: Write multiple paragraphs on a single topic
		.03	ORGANIZATION: Write a story with a beginning, middle, and end	ORGANIZATION: Write a story or composition with a beginning, middle, and end	ORGANIZATION: Write a story or composition with a beginning, middle, and end	ORGANIZATION: Write a story or composition with a beginning, middle, and end	ORGANIZATION: Write a story or composition with a beginning, middle, and end	ORGANIZATION: Write a story or composition with a beginning, middle, and end
		.04	IDEAS: Write using story elements	IDEAS: Write using story elements	IDEAS: Write using story elements	IDEAS: Write using story elements	IDEAS: Write using story elements	IDEAS: Write using story elements
		.05	VOICE: Write thoughts or ideas to communicate with specific audiences	VOICE: Write a variety of forms for specific audiences	VOICE: Use the appropriate organizational structure to match a purpose and audience	VOICE: Use the appropriate organizational structure and voice to match a purpose and audience	VOICE: Use the appropriate organizational structure and voice to match a purpose and audience	VOICE: Use the appropriate organizational structure and voice to match a purpose and audience
		.06	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing	WORD CHOICE: Use enhanced expanded vocabulary and literary techniques to produce expressive writing
		.07	IDEAS: Write a non-fiction sentence	IDEAS: Write a non-fiction paragraph	IDEAS: Write non-fiction paragraphs	IDEAS: Write in a variety of non-fiction forms	IDEAS: Write in a variety of non-fiction forms	IDEAS: Write in a variety of non-fiction forms

Writing Process (WP)	**Conventions**	**.08**	Apply rules of capitalization	Apply rules of capitalization	Apply rules of capitalization	Apply rules of capitalization	Apply rules of capitalization	Apply rules of capitalization
		.09	Apply rules of punctuation	Apply rules of punctuation	Apply rules of punctuation	Apply rules of punctuation	Apply rules of punctuation	Apply rules of punctuation
		.10	Apply rules of spelling	Apply rules of spelling	Apply rules of spelling	Apply rules of spelling	Apply rules of spelling	Apply rules of spelling
		.11	Apply rules of usage in subject/verb agreement	Apply rules of usage in subject/verb agreement	Apply rules of usage in subject/verb agreement	Apply rules of usage in subject/verb agreement	Apply rules of usage in subject/verb agreement	Apply rules of usage in subject/verb agreement
		.12	Identify and correctly use parts of speech	Identify and correctly use parts of speech	Identify and correctly use parts of speech	Identify and correctly use parts of speech	Identify and correctly use parts of speech	Identify and correctly use parts of speech
	Revise	**.13**	Work with peers or teachers to apply the process of revision	Apply the process of revision	Apply the process of revision	Apply the process of revision	Apply the process of revision	Apply the process of revision
		.14	Give and/or receive ideas and suggestions about writing and respond appropriately	Give and/or receive appropriate feedback about written work	Give and/or receive appropriate feedback and use established criteria to review own and others' written work	Give and/or receive appropriate feedback and use established criteria to review own and others' written work	Give and/or receive appropriate feedback and use established criteria to review own and others' written work	Give and/or receive appropriate feedback and use established criteria to review own and others' written work
	Sources	**.15**	Identify sources of oral and written information	Give credit for others' ideas, images, and multi-media information	Give credit for others' ideas, images, and multi-media information	Give credit for others' ideas, images, and multi-media information	Give credit for others' ideas, images, and multi-media information	Give credit for others' ideas, images, and multi-media information
		.16		Use resources throughout the writing process	Use resources throughout the writing process	Use resources throughout the writing process	Use resources throughout the writing process	Use resources throughout the writing process
		.17	Take notes from appropriate sources	Take notes from appropriate sources	Take notes from appropriate sources	Take notes from appropriate sources	Take notes from appropriate sources	Take notes from appropriate sources

Oral Communication (OC)		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	.01	Follow two oral directions	Follow multiple oral directions	Follow multiple oral directions	Follow multiple oral directions	Follow multi-step oral directions	Follow multi-step oral directions
	.02	Use appropriate listening behaviors for a variety of purposes	Use appropriate listening behaviors for a variety of purposes	Use appropriate listening behaviors for a variety of purposes	Use appropriate listening behaviors for a variety of purposes	Use appropriate listening behaviors for a variety of purposes	Use appropriate listening behaviors for a variety of purposes
	.03	Ask appropriate questions to clarify ideas	Ask appropriate questions to clarify ideas	Ask appropriate questions to clarify ideas	Ask appropriate questions to clarify ideas	Ask appropriate questions to clarify ideas	Ask appropriate questions to clarify ideas
	.04	Acknowledge and respond to questions and comments	Acknowledge and respond to questions and comments	Acknowledge and respond to questions and comments	Acknowledge and respond to questions and comments	Acknowledge and respond to questions and comments	Acknowledge and respond to questions and comments
	.05	Use suitable volume, voice and intonation in different situations and audiences	Use suitable volume, voice and intonation in different situations and audiences	Use suitable volume, voice and intonation in different situations and audiences	Use suitable volume, voice and intonation in different situations and audiences	Use suitable volume, voice and intonation in different situations and audiences	Use suitable volume, voice and intonation in different situations and audiences
	.06	Use appropriate body language when speaking	Use appropriate body language when speaking	Use appropriate body language when speaking	Use appropriate body language when speaking	Use appropriate body language when speaking	Use appropriate body language when speaking
	.07	Use appropriate grammar and vocabulary when speaking	Use appropriate grammar and vocabulary when speaking	Use appropriate grammar and vocabulary when speaking	Use appropriate grammar and vocabulary when speaking	Use appropriate grammar and vocabulary when speaking	Use appropriate grammar and vocabulary when speaking
	.08	Make a variety of formal presentations to an audience	Make a variety of formal presentations to an audience	Make a variety of formal presentations to an audience	Make a variety of formal presentations to an audience	Make a variety of formal presentations to an audience	Make a variety of formal presentations to an audience
	.09	Present a project using visual aid	Present a project using visual aid	Present a project using visual aid	Present a project using visual aid	Present a project using visual aid	Present a project using visual aid
	.10		Incorporate references in presentations	Incorporate references in presentations	Incorporate references in presentations	Incorporate references in presentations	Incorporate references in presentations

KPBSD Technology Standards			Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	Level 13
Technology Operations & Concepts	TL.OC.01	Keyboarding 3/2*	Accurately types 30 WPM with proper techniques.	Accurately types 35 WPM with proper techniques.	Accurately types 40 WPM with proper techniques.				
	TL.OC.02	Hardware & Software Problems	Identifies common hardware and software problems and solutions.	Applies strategies for solving common hardware and software problems.	Independently troubleshoots hardware and software issues.	Supports and assists others in troubleshooting common hardware and software problems.	Analyzes and troubleshoots complex hardware and software issues.	Optimizes learning through analyzing and troubleshooting complex hardware and software issues in the school.	
	TL.OC.03	Vocabulary	Defines current technology vocabulary in a variety of settings.	Identifies a variety of hardware and software components which are new to the student.	Explains the basic uses of a variety of technology components which are new to the student.	Uses existing knowledge to infer the uses of new technology in real world settings.			
Creativity & Innovation	TL.CI.01	Word Processing 9/7*	Creates a variety of documents using basic features of word processing software.	Creates a variety of word processing documents which include multiple elements for educational audiences.	Creates a variety of word processing documents using complex features across content areas.	Creates a variety of word processing documents which incorporate elements from multiple sources across content areas.	Creates a variety of word processing documents using advanced features of word across content areas for an authentic audience.	Independently creates a variety of word processing documents using advanced features for a professional audience.	Applies new and existing knowledge to independently, or in collaboration with others, generate new ideas, products, or processes with digital tools.
	TL.CI.02	Spreadsheets 7/5*	Creates spreadsheets including different types of graphs and interprets results.	Creates spreadsheets including different types of charts, graphs, formulas and interprets results or track trends across content areas.	Creates spreadsheets or models which include a variety of appropriate charts, graphs, formulas, and explains the reason for choosing each.	Creates a variety of spreadsheets or models across content areas which include more complex charts, graphs and experimental data and interprets the results.	Creates a variety of spreadsheets models across content areas using advanced features to support a conclusion, including trends, predictions and experimental data.	Creates a variety of spreadsheets or models across content areas using advanced features and manipulates data to justify the results.	Develops digital models or simulations to answer questions or to solve complex, real world problems.
	TL.CI.03	Presentations 3/5*	Creates a variety of digital presentations which include elements from two or more sources (clip art, graphs, graphics,…)	Creates a variety of digital presentations which include original elements from multiple sources for educational audiences. (clip art, graphs, graphics, digital camera, scan…)	Creates a variety of digital presentations using basic techniques across content areas.	Creates a variety of multimedia digital presentations across content areas.	Creates a variety of multimedia digital presentations using advanced techniques across content areas.	Creates a variety of multimedia digital presentations using advanced techniques for authentic audiences or persuasive purposes.	Analyzes the uses of a variety of multimedia presentations and evaluates their effectiveness in their purpose.
	TL.CI.04	Video 3/2*	Creates a simple movie which includes text, photos and sound.	Creates a movie which includes original text, photos and sound for educational purposes.	Creates a variety of short movies which include video, audio and still images across content areas .	Plans, directs and produces a variety of original movies for educational purposes across content areas.	Plans, directs and produces an original movie, individually or with a group, using advanced techniques for a targeted audience or personal expression.	Plans, directs and produces an original movie using advanced techniques for persuasive purposes or personal expression.	Plans, directs and produces an original movie using advanced techniques for a real world purpose or audience.
	TL.CI.05	Audio 3/2*	Incorporates an audio clip into an educational product.	Incorporates multiple audio clips into an educational product.	Creates and incorporates an original audio clip into an educational product.	Produces an original audio clip for a targeted audience or personal expression	Produces an original audio clip using advanced editing techniques for a targeted audience or personal expression	Uses feedback to produce an original audio clip using advanced editing techniques and shares it with a global audience.	Independently produces an professional caliber audio project and shares it with a global audience.
Communication and Collaboration	TL.CC.01	online collaboration	Uses digital tools to appropriately communicate with staff, students and others.	Uses digital tools to collaborate with peers to create and publish a digital products for authentic audiences in a variety of digital environments.	Collaborates appropriately with peers in digital environments with an authentic audience for school related projects.	Collaborates appropriately with peers in digital environments to create and publish a digital project across a variety of content areas.	Collaborates electronically with peers, experts and others to create and publish digital products for authentic audiences and interested individuals and through appropriate networks.	Develops and implements an innovative use of digital collaboration within the school community.	Uses digital collaboration to work with experts in designing an innovative solution to a current real world problem.
	TL.CP.01	Evaluation & Feedback	Identifies evaluation criteria for a digital product, judges the product and make suggestions for improvement.	Creates evaluation criteria for a digital product, judges the product and make suggestions for improvement.	Creates multiple evaluation criteria across content areas for a digital product, judges the product and make suggestions for improvement.	Using evaluation criteria for a digital product, accepts peer feedback and improves the product.	Using evaluation criteria for a digital product, refines and improves the product based on feedback given to other students.	Using evaluation criteria for a digital product, accepts professional feedback and improves the product.	
	TL.CP.02	Digital Tools	Using digital tools, identifies a problem, evaluates possible solutions and makes a recommendation.	Using digital tools, identifies an authentic problem, evaluates possible solutions and makes a recommendation.	Using digital tools, works individually or with a group to identify, investigate and propose a solution to a problem.	Using digital tools, works individually or with a group to identify, investigate and propose a solution to a authentic problem within the school.	Using digital tools, working with a community partner, evaluates a complex real world problem, recommends an original solution and shares with an appropriate audience.	Working with a community partner, evaluates a complex real world problem, recommends and implements solution using digital tools.	

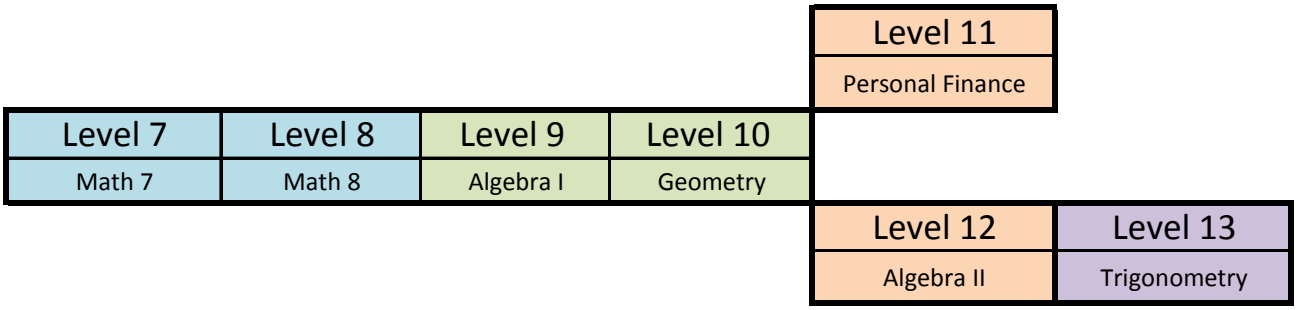
Critical Thinking, Problem Solving & Decision Making	TL.CP.03	Problem Solving	Identifies a problem and create essential questions that guide investigation of an authentic problem using digital resources.	Uses data, examine patterns, and research an authentic problem using digital tools and present a solution.	Applies technology-based problem solving strategies and selects appropriate tools to solve a problem and disseminate results.	Uses multiple processes and considers diverse perspectives to derive original solutions to authentic problems using digital resources and assess their potential to address social, lifelong learning, and career needs.	Identifies a complex global issue, develops a systematic plan of investigation, and presents innovative solutions.	Works independently or with others to Identify a complex global issue, develop a systematic plan of investigation, design an innovative solution, implement the solution and evaluate it's effectiveness.	
	TL.CP.04	Emerging Technology	Researches an emerging technology and explains it's past present and future.	Identifies emerging technologies and explains possible uses.	Researches emerging technologies and evaluates impact.	Researches emerging technologies and predicts future advancements.	Identifies and analyzes the change in a technological component over the course of 25 years.	Analyzes the impact of an emerging technology on a current crisis in science or social science.	Uses current research on emerging technology to design a technology which would impact a current world crisis.
	TL.CP.05	Digital Planning	Plans and manages individual projects using a digital planning tool.	Plans and manages group projects using a digital planning tool.	Selects and uses appropriate digital planning tools to complete a project.	Selects, uses and analyzes appropriate digital planning tools to complete a project.	Uses digital tools to plan, organize (timeline, track progress, cite sources) , and critique a complex research-based inquiry project.	Uses multiple digital tools in real world situations to improve personal time management and organization.	
Research and Digital Literacy	TL.DL.01	Locating & Evaluating Information	Uses advanced search techniques to locate, access, synthesize, and evaluate credible information from multiple sources.	Uses advanced search techniques to locate, access, synthesize, and evaluate credible information from multiple sources to create an original product.	Uses advanced search techniques to locate, access, synthesize, and evaluate credible information from multiple sources across multiple content areas.	Uses advanced search techniques to locate, access, synthesize, and evaluate information from multiple sources to create an original real-world product for an authentic audience.			
	TL.DL.02	Documenting Sources		Uses digital tools to document source appropriately.	Uses digital tools to document multiple sources appropriately.	Uses digital tools to document multiple sources appropriately across content areas.	Uses digital tools to document a variety of types of sources appropriately across content areas.	Uses digital tools to document a variety of types of sources appropriately in real world publications.	Applies a variety of different styles of source citing in a variety of applications. (APA, MLA, etc..)
	TL.DL.03	Data Evaluation	Discerns between facts and opinions in digital content.	Evaluates and compares facts and opinions in digital content sources.	Evaluates and compares facts and opinions in digital content sources and describe the point of view.	Uses current and emerging digital resources to assemble and evaluate facts, opinions, and points of view appropriate to educational topics across content areas.	Uses current and emerging digital resources to assemble and evaluate facts, opinions, and points of view appropriate to real-world application.	Uses current and emerging digital resources to assemble and evaluate facts, opinions, and points of view appropriate to real-world application and share with an appropriate digital or professional audience.	Instructs others in the use of current digital resources as a way to assemble and evaluate data in real world applications.
	TL.DL.04	Resources	Selects and justifies using appropriate, credible, digital resources to accomplish a variety of tasks.	Uses a digital tool to collect and process data to test theories and hypotheses.	Uses multiple digital tools to collect and process data to test theories and hypotheses.	Uses a digital tool to analyze data and critique theories and hypotheses.	Uses multiple digital tools to analyze data in multiple ways and critique theories or hypotheses.	Uses multiple digital tools to present and defend data and hypotheseses in original experiments.	Uses multiple digital tools in a new and innovative way in other content areas.
Digital Citizenship	TL.DC.01	Online Citizenship	Identifies possible personal and moral dangers associated with Internet use, creates a personal code of conduct, and demonstrates techniques for using the Internet safely	Role plays potential dangerous situations associated with Internet use and demonstrates techniques Internet safety. (e.g. harassment, identity, etc.)	Summarizes appropriate online social behavior, analyzes consequences and evaluates own actions.	Summarizes potential online security risks, analyzes consequences, evaluates own actions and creates a plan for safety.	Analyzes the risks and benefits of online financial management and creates a plan for financial security.		
	TL.DC.02	Plagiarism & Original Work	Explains what plagiarism is and gives examples.	Differentiates between original work and plagiarism in real world situations.	Identifies and describes how technology has impacted the responsibilities of community leaders in the areas of leadership, ethics and integrity.	Designs and teaches a lesson for a targeted group of students exploring the legal and ethical uses of technology.	Models ethics in technology in the community and mentors a new student in technology.	Instructs a group of students in an area of expertise related to technology.	Leads a workshop or class for a group of non-peers in an area of technological expertise.
	TL.DC.03	Copyright	Reviews why copyright is important.	Demonstrates appropriate use of copyright (I.e. open source, and shareware documents, Internet files etc.) and software to meet educational needs.	Explores intellectual property lawsuits and determine potential impact on the future.	Articulate the concepts and issues revolving around intellectual and digital property rights and ethical behaviors.	Compares the similarities and differences between acceptable use of technology resources in school and work environments.	Analyzes current legal challenges to copyright issues.	Defends a personal position on current copyright legislation or legal opinion.

	TL.DC.04	Advocacy				Posts one project in portfolio on the legal and ethical uses of technology	Analyzes the current ethical use of technology in the school and creates a plan for improvement.	Advocates in the school for ethical uses of technology.	Designs, implements and evaluates a school-wide or work-wide program to improve ethical uses of technology.

Key

Middle School
High School
Graduation Level
Level Above Grad

Performance Based Math Map



Key

- Middle School
- High School
- Graduation Level
- Level Above Grad

KPBSD Number	GLE (pre-cursor to future GLE)	Level 7
NUMERATION		
MA.07.NU.01	7 N-2	Models or identifies place value positions of whole numbers and decimals.
MA.07.NU.02	7 N-3	Converts between expanded notation (multiples of ten) and standard form for decimal numbers.
MA.07.NU.06	(8 N-8)	Applies the rules for order of operations to evaluate expressions with multiplication and addition.
MA.07.NU.07	7 N-1	Orders rational numbers, including exponents and perfect squares to 144.
MA.07.NU.09	7 N-4	Converts between equivalents of positive fractions, decimals, and percents through using proportions and ratios.
MA.07.NU.11	7 N-5	Uses models, explanations, number lines, and real life situations to describe or illustrates the effects of arithmetic operations on rational numbers including inequalities.
MA.07.NU.12	7 N-6	Uses commutative, associative , inverse and identity properties with rational numbers to demonstrate number theory.
MA.07.NU.13	7 N-9	Uses distributive property with rational numbers to demonstrate number theory.
MA.07.NU.14	7 N-7	Applies rules of divisibility to whole numbers.
MA.07.NU.15	7 N-8	Identifies prime and composite numbers.
ESTIMATION & COMPUTATION		
MA.07.EC.01	7 EC-1	Checks for reasonableness by using a variety of estimation strategies including truncating, rounding, front-end estimation, and compatible numbers.
MA.07.EC.02	7 EC-2	Compares the results of different estimation strategies to solve problems.
MA.07.EC.03	7 EC-3	Adds and subtracts fractions and mixed numbers with unlike denominators or decimals to the thousandths place.
MA.07.EC.04	7 EC-4	Uses decimals to hundredths, and fractions and mixed numbers by multiplying and dividing to accurately solve problems.
MA.07.EC.05	7 EC-5	Solves problems by converting between fractions, terminating decimals and percents.
MA.07.EC.06	7 EC-6	Solves proportions using a given scales.
MEASUREMENT		
MA.07.ME.01	7 MEA-1	Uses estimation in a variety of situations including length, volume, and angles with appropriate accuracy (both Metric and Customary units).
MA.07.ME.02	7 MEA-2	Converts simple measurements (length, weight, volume/capacity) within the same system (customary to customary; metric to metric) involving one step.
MA.07.ME.04	7 MEA-3 7 G-3	Applies a given scale factor to find missing dimensions of similar figures.
MA.07.ME.05	7 MEA-4	Measures various dimensions to one-sixteenth of an inch or a millimeter.
MA.07.ME.06	7 MEA-5	Measures given angles using a protractor to an accuracy of 2 degrees.
MA.07.ME.07	7 MEA-6	Solves real world problems involving elapsed time between time zones.
FUNCTIONS & RELATIONS		
MA.07.FR.01	7 FR-1	Describes and extends linear patterns up to ten terms which are represented in tables, sequences or in problem situations.
MA.07.FR.02	7 FR-2	Generalizes linear relationships using a table of ordered pairs, a function, an equation and graph to show understanding of functions, patterns or sequences, including in real world situations.
MA.07.FR.03	7 FR-3	Describes in words how a change in one variable in a formal affects the remaining variables. (Slope) EX: How changing the length affects the area of a quadrilateral

KPBSD Number	GLE (pre-cursor)	Level 7 (continued)
FUNCTIONS & RELATIONS (continued)		
MA.07.FR.04	7 FR-4	Describes and extends functions, patterns and sequences including those represented in real world situations through using a calculator as a tool when describing, extending or representing patterns.
MA.07.FR.05	7 FR-5	Evaluates algebraic expressions for given values which demonstrate algebraic thinking .
MA.07.FR.06	7 FR-6	Solves or identifies solutions to one step linear equations of the form x + a = b, x - a = b, where a and b are whole numbers.
MA.07.FR.07	7 FR-6	Translates a story problem into an equation of x + a = b or x - a = b.
GEOMETRY		
MA.07.GO.01	7 G-1	Uses the attributes and properties of polygons (diagonals, number of sides, and angles) to identify and classify regular or irregular polygons.
MA.07.GO.02	7 G-2	Uses the attributes and properties of 3-dimensional figures (vertices, length, and alignment of edges, shape and number of bases, nets) to identify and describe triangular or rectangular pyramids.
MA.07.GO.04	7 G-4	Draws or describes the results of applying transformations such as translations, rotations, reflections, and dilations to a variety of shapes.
MA.07.GO.05	7 G-5	Determines the volume of cubes and rectangular prisms to solve problems including real world situations.
MA.07.GO.06	7 G-7	Calculates the perimeter and area of polygons including circumference of a circle.
MA.07.GO.07	7 G-6	Determines the surface area of rectangular prisms.
MA.07.GO.08	7 G-8	Graphs and identifies variables on a coordinate grid.
MA.07.GO.09	7 G-9	Draws, measures and constructs polygons with given dimensions and angles and circles with given dimensions.
STATISTICS & PROBABILITY		
MA.07.SP.01	7 SP-1	Classifies and organizes data by collecting, displaying, organizing, and explaining the classification of data in real-world problems which use circle graphs, frequency distributions, stem and leaf and scatter plots, box and whiskers, and histograms with appropriate scale, with given intervals.
MA.07.SP.03	7 SP-2	Analyzes data by using information from a variety of displays which includes comparing, explaining, interpreting, evaluating, making predictions, drawing or justifying conclusions. EX: As found in graphical displays in newspapers and magazines.
MA.07.SP.05	7 SP-3	Analyzes data by determining mean, median, mode and range which includes comparing, explaining, interpreting, evaluating, making predictions, drawing or justifying conclusions.
MA.07.SP.06	7 SP-4	Calculates the theoretical probability and counting techniques by determining the experimental and theoretical probability of a simple event.
MA.07.SP.07	7 SP-5	Demonstrates a conceptual understanding of probability and counting techniques by using a systematic approach to finding sample spaces or to making predictions about the probability of independent events.
MA.07.SP.08	7 SP-6	Designs and conducts a simulation to study a problem and communicates the results.

KPBSD Number	GLE (pre-cursor to future GLE)	Level 7 (continued)
PROBLEM SOLVING		
MA.07.PS.01	7 PS-1	Selects, modifies, and applies a variety of problem-solving strategies (e.g., working backwards, drawing a picture, Venn diagrams) and verifies the results.
MA.07.PS.02	7 PS-2	Uses a variety of problem solving strategies to evaluate, interpret, and justify solutions to problems.
MA.07.PS.03	7 PS-3	Represents mathematical problems numerically, graphically, and/or symbolically; and uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions.
MA.07.PS.04	7 PS-4	Uses informal deductive and inductive reasoning in concrete contexts and states counterexamples to disprove statements; and justifies and defends the validity of mathematical strategies and solutions using examples (M9.3.1, M9.3.2, & M9.3.3)
MA.07.PS.05	7 PS-5	Applies math skills and processes to real-world contexts such as science, humanities, peers, and community.

KPBSD Number	GLE (pre-cursor to future GLE)	Level 8
NUMERATION		
MA.08.NU.03	8 N-1	Orders real numbers including exponents and roots.
MA.08.NU.06	8 N-4 8 EC-4	Identifies, describes or illustrates equivalent representations of real numbers.
MA.08.NU.07	8 N-8	Applies rules for order of operations to rational numbers.
MA.08.NU.08	8 N-6	Uses models, explanations, number lines, and real life situations to describe or illustrate the effects of arithmetic operations on real numbers including fractions, decimals and percents.
MA.08.NU.09	8 N-7	Uses models, explanations, number lines, and real life situations to describe or illustrate the use of inverse operations.
MA.08.NU.10	8 N-10	Uses distributive property, among others, with real numbers to demonstrate number theory with variables.
MA.08.NU.12	8 N-5 8 N-3	Expresses products of numbers using exponents with rational numbers.
MA.08.NU.13	8 N-2 8 N-3	Converts between whole numbers in scientific notations and real numbers in standard form.
MA.08.NU.14	8 N-9 8 N-3	Identifies and writes the prime factorization of a number using exponents, including greatest common factor and least common multiple.
ESTIMATION & COMPUTATION		
MA.08.EC.01	8 EC-1	Applies and assesses a variety of estimation strategies to solve problems including real world situations.
MA.08.EC.03	8 EC-2	Adds, subtracts, multiplies and divides integers
MA.08.EC.04	8 EC-2	Multiplies and divides integers Scientific notation and exponents.
MA.08.EC.05	8 EC-2	Adds, subtracts, multiplies and divides rational numbers.
MA.08.EC.06	8 EC-3	Uses percents and percentages to solve problems, including real world situations.
MA.08.EC.07	8 EC-5	Solves ratio and proportion problems including real world situations.
MEASUREMENT		
MA.08.ME.02	8 MEA-1	Converts measurements within the same system (customary or metric) involving two or more steps.
MA.08.ME.04	8 MEA-2	Uses scale drawings involving indirect measurement to determine scale factor and apply it to find missing dimension.
MA.08.ME.05	8 MEA-3	Uses measurement techniques in a variety of situations including length, volume, scale, temperature, angles and dimensional analysis within the same system.
MA.08.ME.07	8 MEA-2	Solves a variety of problems using the Pythagorean Theorem (triples), and simple trig ratios.
FUNCTIONS & RELATIONS		
MA.08.FR.01	8 FR-1 8 FR-4	Identify, extend and graph linear patterns up to the nth term which are represented in tables, sequences, graphs and in problem situations, using a calculator when appropriate.
MA.08.FR.02	8 FR-2	Generalizes linear relationships using a table of ordered pairs, a graph or an equation including expressing slope.
MA.08.FR.03	8 FR-3	Describes in words how a change in one variable affects the remaining variables, including volume. EX: How changing the length affects the area of quadrilaterals or volume of a rectangular prism.
MA.08.FR.05	8 FR-5	Translates a written phrase to an algebraic expression (including inequalities).
MA.08.FR.06	8 FR-6	Solves and identifies solutions to two-step linear equations of the form $ax \pm b = c$, where a, b, and c are rational numbers (including inequalities).
MA.08.FR.07	8 FR-6	Translates a story problem into an equation of $ax + b = c$, where a, b, and c are rational numbers or translating a story problem into a similar equation (including inequalities).

KPBSD Number	GLE	Level 8 (continued)
GEOMETRY		
MA.08.GO.01	8 G-1	Uses the attributes and properties of regular polygons to sketch regular or irregular polygons.
MA.08.GO.02	8 G-2	Uses the attributes and properties of solid figures (vertices, length and alignment of edges, shape and number of bases) to identify and describe polygons, cylinders, cones, and rectangular prisms.
MA.08.GO.03	8 G-3	Demonstrates geometric relationships by using 2-dimensional nets to create 3-dimensional objects (prisms and cylinders) EX: Orthographic & isometric representations.
MA.08.GO.04	8 G-4	Uses proportionality to solve real-world problems involving similar shapes.
MA.08.GO.05	8 G-5	Identifies the results of applying transformations to figures on a coordinate plane. EX: translations, rotations, reflections, and dilations.
MA.08.GO.06	8 G-6	Determines the volume of right triangular prisms, cylinders, pyramids and cones.
MA.08.GO.07	8 G-8	Calculates the circumference and area of a circle.
MA.08.GO.08	8 G-7	Calculates the surface area of cylinders, triangular prisms, pyramids and cones.
MA.08.GO.09	8 G-9	Graphs and identifies relationships of variables on a coordinate plane including inequalities. EX: length/width, area/diameter, cost/pound.
MA.08.GO.10	8 G-10	Draws, measures and constructs geometric figures (polygons, perpendicular bisectors, and perpendicular and parallel lines).
STATISTICS & PROBABILITY		
MA.08.SP.01	8 SP-1	Classifies and organizes data by designing, collecting, organizing, displaying and explains the classification of data in real world problems using histograms, scatter plots, frequency distributions, circle graphs, box and whisker plots, stem leaf plots with appropriate scale or with technology.
MA.08.SP.02	8 SP-2	Analyzes data by using information from a variety of displays and analyzes the validity of statistical conclusions found in the media, which include comparing, explaining, interpreting, evaluating, making predictions, describing trends, drawing, formulating and justifying conclusions.
MA.08.SP.04	8 SP-3	Determines and justifies a choice of range, mean, median, and mode as the best representation of data for a practical situation.
MA.08.SP.06	8 SP-4	Determines and compares the experimental and theoretical probabilities of simple events.
MA.08.SP.07	8 SP-5	Uses a systematic approach to finding sample spaces or to making predictions about the probability of independent events and using the information to solve real-world problems.
MA.08.SP.08	8 SP-6	Designs and conducts a simulation to study a problem & communicates results.
PROBLEM SOLVING		
MA.08.PS.01	8 PS-1	Selects, modifies, and applies a variety of problem-solving strategies (e.g., inductive and deductive reasoning, Venn diagrams, making a simpler problem) and verifies the results.
MA.08.PS.02	8 PS-2	Evaluates, interprets, and justifies solutions to problems
MA.08.PS.03	8 PS-3	Represents mathematical problems numerically, graphically, and symbolically, and translates among these alternative representations.
MA.08.PS.04	8 PS-3	Uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions
MA.08.PS.05	8 PS-4	Generalizes from patterns of observations (inductive reasoning) about mathematical problems and tests using a logical verification (deductive reasoning); or justifies and defends the validity of mathematical strategies and solutions using examples and counterexamples
MA.08.PS.06	8 PS-5	Uses math skills and processes from this level in real-world contexts such as science, humanities, community, and careers

KPBSD Number	GLE (pre-cursor to future GLE)	Level 9 - Algebra I
NUMERATION		
MA.09.NU.02	9 N-2	Equates different representations of the same exponential expression, including simplifying radicals.
MA.09.NU.03	9 N-3	Applies the rules for order of operations to real numbers and variables.
MA.09.NU.04	9 N-3	Uses models, explanations, number lines, and real life situations to describe or illustrate the effects of arithmetic operations on real numbers.
MA.09.NU.05	9 N-4	Describes or illustrates the use of inverse operations with by using models, explanations, number lines, and real life situations, including exponents.
MA.09.NU.11	9 N-6	Applies the distributive property to problems with variables.
MA.09.NU.12	9 N-6 9 N-4	Uses properties of exponents to add, subtract, multiply, and divide polynomials, multiply binomials, and factor trinomials using various methods.
MA.09.NU.14	9 N-1	Selects, converts and applies rational numbers in scientific notation and standard form.
ESTIMATION & COMPUTATION		
MA.09.EC.01	9 EC-1	Evaluates whether an estimation strategy will result in an answer greater or less than the exact answer to solve problems.
MA.09.EC.03	9 EC-2	Adds and subtracts rational numbers including integers with whole number exponents.
MA.09.EC.04	9 EC-3	Multiples and divides rational numbers including integers with Integer exponents.
MA.09.EC.05	9 EC-4	Uses percentages to solve a variety of real world problems including compound interest.
MA.09.EC.06	9 EC-4	Determines rate by using ratio and proportion to solve problems including real world situations.
MA.09.EC.07	9 EC-5	Multiples and divides numbers in scientific notation.
MEASUREMENT		
MA.09.ME.02	9 MEA-1	Estimates and converts measurements between the English and metric systems in real world applications given a conversion factor.
MA.09.ME.05	9 MEA-1	Uses measurement techniques in a variety of situations including metrics, standard, weight, length, capacity, and dimensional analysis
MA.09.ME.07	9 MEA-2	Applies indirect methods to find missing dimensions in real world applications, including the Pythagorean Theorem, distance and midpoint theorems, and special right triangles.
FUNCTIONS & RELATIONS		
MA.09.FR.01	9 FR-1	Identify, extend and graph patterns up to the nth term, represented in tables, sequences, graphs or in problem situations for families of functions: linear (Slope Intercept form, standard form, parallel and perpendicular lines), quadratic, absolute value.
MA.09.FR.02	9 FR-2	Generalizes relationships (linear, quadratic, absolute value, and exponential) using a table of ordered pairs, a graph and an equation.
MA.09.FR.03	9 FR-3	Describes in words how a change on one variable in a formula affects the remaining variables for volume. EX: How changing the radius affects the volume of a cylinder, direct and inverse variations).
MA.09.FR.04	9 FR-4	Using a calculator as a tool when describing, extending, representing and graphing patterns and linear equations.
MA.09.FR.05	9 FR-5	Models (graphically or algebraically) or solving situations using systems of linear equations, inequalities, or radicals.

KPBSD Number	GLE	Level 9 - Algebra I (continued)
FUNCTIONS & RELATIONS (continued)		
MA.09.FR.06	9 FR-6	Solves or identifies solutions to multi-step linear equations of the form ax + b = cx + d, where a, b, c, and d are rational numbers and a and c are not zero.
MA.09.FR.07	9 FR-7	Solves literal equations and formulas for a variable involving one step. EX: Solve for t when d = rt.
GEOMETRY		
MA.09.GO.01	9 G-1	Identifies, analyzes, compares and uses the properties of angles (including supplementary and complementary) and circles (degrees in a circle).
MA.09.GO.03	9 G-1	Demonstrates geometric relationships by drawing 3-dimensional figures. EX: Orthographic & isometric views.
MA.09.GO.04	9 G-2	Uses concepts of similarity, congruence, symmetry or transformations of shapes through using a coordinate plane to solve problems involving congruent or similar shapes.
MA.09.GO.05	9 G-3	Draws and describes the results of applying transformations (translations, rotations, reflections, and dilations) to figures on a coordinate plane.
MA.09.GO.06	9 G-4	Calculates the volume and surface area of prisms, cylinders, cones and pyramids.
MA.09.GO.07	9 G-5	Graphs linear equations, inequalities, and systems of equations determines slopes of lines, identifies parallel and perpendicular lines on a coordinate plane.
MA.09.GO.09	9 G-6	Draws, measures and constructs geometric models of plane figures, which contain parallel and perpendicular lines using a variety of methods including paper folding, straight edge, protractor, compass or technology
STATISTICS & PROBABILITY		
MA.09.SP.01	9 SP-1	Classifies and organize data by designing, collecting, organizing, displaying and explaining the classification of data in real-world problems by using information from tables or graphs that display two or more sets of data.
MA.09.SP.02	9 SP-2	Analyzes data by using information from a variety of displays and analyzes the validity of statistical conclusions found in the media.
MA.09.SP.04	9 SP-3	Uses range and measures of central tendency to determine the best representation of the data for a practical situation.
MA.09.SP.05	9 SP-4	Identifies, determines and explains the line of best fit.
MA.09.SP.06	9 SP-5	Determines and compares the experimental and theoretical probabilities of independent and dependent events.
MA.09.SP.07	9 SP-6	Makes predictions about the probability of independent and dependent events and uses that information to solve problems.
MA.09.SP.08	9 SP-7	Designs, conducts, analyzes and communicates the results of a probability experiment.
PROBLEM SOLVING		
MA.09.PS.01	9 PS-1	Selects, modifies, and applies a variety of problem-solving strategies (e.g., charts, graphing, inductive and deductive reasoning, Venn diagrams) and verifies the results
MA.09.PS.02	9 PS-2	Evaluates, interprets, and justifies solutions to problems by using an alternative strategy
MA.09.PS.03	9 PS-3	Represents mathematical problems numerically, graphically, and/or symbolically; translates among these alternative representations; or uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions
MA.09.PS.04	9 PS-4	Follows and evaluates an argument, judging its validity using inductive or deductive reasoning and logic; or makes and tests conjectures
MA.09.PS.05	9 PS-5	Uses real-world contexts such as science, humanities, peers, community, careers, and national issues

KPBSD Number	GLE (pre-cursor)	Level 10 - Geometry
NUMERATION		
MA.10.NU.01	10 N-1	Identifies subsets of real numbers (natural, whole, integers, rational, irrational)
MA.10.NU.02	10 N-2	Simplifies expressions with positive and negative exponents with real numbers.
MA.10.NU.03	10 N-5	Describes or illustrates the use of inverse operations (cubing/cube root).
MA.10.NU.05	10 N-3	Expresses square roots in simplest radical form.
MA.10.NU.09	10 N-4	Describes or illustrates the effects of arithmetic operations on real numbers including matrices.
MA.10.NU.11	10 N-7	Identifies and applies commutative, identity, associative, inverse, or distributive properties to real numbers and variables.
MA.10.NU.15	10 N-8	Identifies or writes the prime factorization of a variable expression using exponents.
MA.10.NU.16	10 N-6	Describes or illustrates counting and adding in different bases.
ESTIMATION & COMPUTATION		
MA.10.EC.01	10 EC-1	Using estimation, explains why one strategy is more appropriate than another and determines why the estimation result is greater or less than the exact answer.
MA.10.EC.05	10 EC-3	Solves a variety of problems involving percent increase or decrease, (ex. Tolerance, compound continuously).
MA.10.EC.07	10 EC-2	Applies basic operations with real numbers using powers and scientific notation.
MEASUREMENT		
MA.10.ME.05	10 MEA-1	Uses measurement techniques in a variety of situations using dimensional analysis with square and cubic units.
MA.10.ME.07	10 MEA-2	Applies right triangles and trigonometry (sine, cosine, tangent) to find missing dimensions in real world applications.
FUNCTIONS & RELATIONS		
MA.10.FR.01	10 FR-1	Identify, extend and graph patterns up to the nth term, represented in tables, sequences, graphs or in problem situations for families of functions: linear (function notation, vertex form), quadratic, absolute value, including those in real world situations.
MA.10.FR.02	10 FR-2	Generalizes equations and inequalities (linear, quadratic and absolute value) using a table of ordered pairs or a graph.
MA.10.FR.03	10 FR-3	Describes in words how a change in one variable or constant in an equation (linear, quadratic, absolute value) affects the outcome of the equation.
MA.10.FR.04	10 FR-4	Uses a calculator as a tool when describing, extending, representing and graphing patterns, linear equations, and quadratic equations.
MA.10.FR.05	10 FR-5	Models (graphically or algebraically) and solves situations using systems of linear equations and inequalities, including real world situations.
MA.10.FR.06	10 FR-6	Selects and uses the quadratic formula to solve problems.
MA.10.FR.07	10 FR-7	Solves or identifies solutions to literal equations or formulas for a variable involving multi-steps. EX: Solve for h when A = 1/2h(b1+b2)).

KPBSD Number	GLE (pre-cursor)	Level 10 - Geometry (continued)
GEOMETRY		
MA.10.GO.01	10 G-1	Identifies, analyzes, compares and uses the properties of plane figures including supplementary, complementary and vertical angles, angles created by parallel lines with a transversal and sums of interior/exterior angles of a polygon.
MA.10.GO.02	10 G-1	Identifies, analyzes, compares and uses the properties of plane figures of central angles, chords and inscribed arcs.
MA.10.GO.03	10 G-2	Uses isometric drawings to create 2-dimensional drawings of 3-dimensional objects. EX: Shapes that are composites of rectangular right prisms.
MA.10.GO.04	10 G-3	Uses Euclidean geometry to identify congruent and similar figures.
MA.10.GO.05	10 G-4	Uses transformations to show congruence and similarity of figures on a coordinate plane.
MA.10.GO.06	10 G-5	Calculates the area of polygons, volume and surface area of spheres and compound solids.
MA.10.GO.07	10 G-6	Graphs a line segment angles and polygons on a coordinate grid and identifies it's length and midpoint by using formulas, determines slopes of lines, identifies parallel and perpendicular lines. (Wordiness??)
MA.10.GO.08	10 G-7	Graphs a system of equations on a coordinate gird, identifies a solution, and determines their relationship (intersecting, parallel, perpendicular).
MA.10.GO.09	10 G-8	Draws, measures and constructs geometric models of plane figures, which contain parallel and perpendicular lines, angles, perpendicular bisectors, congruent angles and regular polygons using a variety of methods including paper folding, straight edge, protractor, compass or technology
STATISTICS & PROBABILITY		
MA.10.SP.01	10 SP-1	Classifies and organizes data by designing, collecting, organizing, displaying and explaining the classification of data in real world problems using information from tables or graphs that display three or more sets of data.
MA.10.SP.02	10 SP-2	Uses information from a display to solve a problem and analyze the validity of statistical conclusions in real world applications.
MA.10.SP.04	10 SP-3	Uses and justifies the range and measures of central tendency to determine the best representation of the data for a real world application.
MA.10.SP.05	10 SP-4	Uses a line of best fit to analyze data, including comparing, explaining, interpreting, evaluating, making predictions, describing trends, drawing, formulating, and justifying conclusions.
MA.10.SP.06	10 SP-5	Explains in words and identifies the difference between experimental and theoretical probability of independent and dependent events, including geometric probabilities.
MA.10.SP.07	10 SP-6	Uses probability and counting techniques to analyze data to make predictions about the probability of independent and dependent events as a basis for solving real world problems.
MA.10.SP.08	10 SP-7	Designs, conducts, analyzes and communicates the results of a multi-stage probability experiment.
PROBLEM SOLVING		
MA.09.PS.01	10 PS-1	Applies multi-step, integrated, mathematical problem-solving strategies
MA.09.PS.02	10 PS-2	Verifies the answer by using an alternative strategy
MA.09.PS.03	10 PS-3	Represents mathematical problems numerically, graphically, and/ or symbolically; communicates math ideas in writing; or uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions
MA.09.PS.04	10 PS-4	Uses methods of proof including direct, indirect, and counterexamples to validate conjectures
MA.09.PS.05	10 PS-5	Uses real-world contexts such as global issues and careers

KPBSD Number		Level 11 - Personal Finance
PERSONAL FINANCE		
MA.11.PF.01		Compares the advantages and disadvantages of a variety of different accounts, including checking and savings accounts.
MA.11.PF.02		Demonstrates appropriate use of a personal banking account over time.
MA.11.PF.03		Analyzes a variety of techniques which are used to attract shoppers and identifies real world uses of each technique.
MA.11.PF.04		Calculates a variety of different discounting strategies used by retailers and evaluates the best buy.
MA.11.PF.05		Defines different types of income and calculates sample gross and net incomes.
MA.11.PF.06		Defines and calculates common deductions from income, including insurance costs, local, state and federal taxes.
MA.11.PF.07		Explains the cost of living index and evaluates its impact in real life scenarios.
MA.11.PF.08		Evaluates different benefits available and calculates their worth.
MA.11.PF.09		Defines different types of pay structure, including bonuses, commissions, and piece work.
MA.11.PF.10		Analyzes self-employment situations.
MA.11.PF.11		Prepares yearly tax documents for real or practice situations.
MA.11.PF.12		Completes standard payroll forms, including I-9, W-2, and other forms.
MA.11.PF.13		Develops a budget for a real-world vacation, including all expenses and a savings plan to cover costs.
BANKING & CREDIT		
MA.11.BC.01		Describes basic terms related to credit cards.
MA.11.BC.02		Evaluates three different credit card offers and makes a recommendation for use.
MA.11.BC.03		Calculates actual costs of purchases on credit card.
MA.11.BC.04		Analyzes the benefits and consequences of renting versus purchasing a home.
MA.11.BC.05		Analyzes a different types of credit related to home purchase, including mortgages, home improvement loans, balloon loans, etc….
MA.11.BC.06		Outlines the process of a real world house purchase, including time frame, down payment costs, additional costs, and monthly payment amounts.
MA.11.BC.07		Analyzes the benefits and consequences of leasing versus purchasing a car.
MA.11.BC.08		Calculates the actual costs of purchasing a new versus a used car.
MA.11.BC.09		Defends a potential car purchase or lease in real world situations.
MA.11.BC.10		Calculates the actual costs of owning a vehicle for one year, including maintenance, gas, depreciation and other fees.
MA.11.BC.11		Evaluates different credit scores and explains factors which impact credit scores.
INVESTMENTS		
MA.11.IV.01		Defines vocabulary related to the stock and bond market.
MA.11.IV.02		Simulates a real world stock/bond/fund purchase and analyzes the results over time.
MA.11.IV.03		Explains the differences between stocks, bonds and mutual funds.
MA.11.IV.04		Describes a variety of potential investment funds, including 401K, IRAs, etc…
MA.11.IV.05		Analyzes the use of real estate as an investment tool.
MA.11.IV.06		Explains a variety of investment insurances and calculates their costs, while making recommendations.
MA.11.IV.07		Compares a variety of retirement strategies and develops a sample plan for retirement.

KPBSD Number		Level 12 - Algebra II
NUMERATION		
MA.12.NU.02		Applies the properties of Real Numbers
MA.12.NU.03		Simplifies expressions with positive and negative exponents with real numbers
MA.12.NU.05		Describes or illustrates the use of inverse operations (cubing/cube root).
MA.12.NU.11		Expresses square roots in simplest radical form including complex numbers.
ESTIMATION & COMPUTATION		
MA.12.EC.01		Describes or illustrates the effects of arithmetic operations on real numbers including matrices.
MA.12.EC.03		Identifies and applies commutative, identity, associative, inverse, or distributive properties to real numbers and variables(factors trinomials).
MA.12.EC.07		Identifies or writes the prime factorization of a variable expression using exponents.
MA.12.EC.08		Describes or illustrates, simplifies arithmetic operations in different bases (e, log).
MA.12.EC.09		Uses properties of exponents to add, subtract, multiply, and divide polynomials, multiply binomials, and factor trinomials using various methods.
MA.12.EC.10		Using estimation, explains why one strategy is more appropriate than another and determines why the estimation result is greater or less than the exact answer.
MA.12.EC.14		Solves a variety of problems involving percent increase or decrease, (ex. Tolerance, compound continuously).
MA.12.EC.16		Applies basic operations with real numbers using powers and scientific notation.
MEASUREMENT		
MA.12.ME.01		Uses measurement techniques in a variety of situations using dimensional analysis.
MA.12.ME.02		Applies indirect methods to find missing dimensions in real world applications, including the distance and midpoint theorems, classifying the triangle, and perpendicular bisector
MA.12.ME.03		Applies right triangles and trigonometry (sine, cosine, tangent) to find missing dimensions in real world applications.
FUNCTIONS & RELATIONS		
MA.12.FR.01		Identify, extend and graph patterns up to the nth term, represented in tables, sequences, graphs or in problem situations for families of functions: linear (Slope Intercept form, standard form, parallel and perpendicular lines, function notation, vertex form), quadratic, absolute value, including those in real world situations.
MA.12.FR.02		Generalizes equations and inequalities (linear, quadratic and absolute value) using a table of ordered pairs or a graph.
MA.12.FR.03		Describes in words how a change in one variable or constant in an equation (linear, quadratic, absolute value, direct and inverse variations, asymptotes) affects the outcome of the equation.
MA.12.FR.04		Uses arithmetic operations on functions
MA.12.FR.05		Models (graphically or algebraically) and solves situations using systems of linear equations and inequalities, three equations three unknowns, including real world situations.
MA.12.FR.06		Selects and uses the quadratic formula, square root, squaring methods, properties of e & log, to solve problems.
MA.12.FR.07		Solves or identifies solutions to equations or formulas for a variable involving multi-steps. EX: find the zeros.
MA.12.FR.08		Identify, extend and graph patterns up to the nth term of arithmetic and geometric sequences including partial sums and sums of infinite series

KPBSD Number		Level 12 - Algebra II (continued)
GEOMETRY		
MA.12.GO.01		Identifies, analyzes, compares and uses the properties of plane figures including supplementary, complementary and vertical angles, angles created by parallel lines with a transversal and sums of interior/exterior angles of a polygon.
MA.12.GO.02		Identifies, analyzes, compares and uses the properties of plane figures central angles, chords and inscribed arcs.
MA.12.GO.03		Uses isometric drawings to create 2-dimensional drawings of 3-dimensional objects. EX: Shapes that are composites of rectangular right prisms.
MA.12.GO.04		Uses Euclidean geometry to identify congruent and similar figures.
MA.12.GO.05		Uses transformations to show congruence and similarity of figures on a coordinate plane.
MA.12.GO.06		Calculates the area of polygons, volume and surface area of spheres and compound solids.
MA.12.GO.07		Graphs a line segment, absolute values, square root, exponential function on a coordinate grid
MA.12.GO.08		Generalizes and graphs quadratic equations and inequalities on a coordinate gird, identifies a solution, and determines their relationship (concave up or down, vertex, symmetry, focus directrix).
MA.12.GO.09		Generalizes and graphs conic sections on a coordinate gird, identifies a solution, and determines their relationship (concave up or down, vertex, symmetry, focus, and directrix).
STATISTICS & PROBABILITY		
MA.12.SP.02		Classifies and organizes data by designing, collecting, organizing, displaying and explaining the classification of data in real world problems using information from tables or graphs that display two or more sets of data. (HOW IS THIS DIFFERENT FROM 9)???
MA.12.SP.03		Uses information from a display to solve a problem and analyze the validity of statistical conclusions in real world applications.
MA.12.SP.05		Uses and justifies the range and measures of central tendency, including standard deviation to determine the best representation of the data for a real world application.
MA.12.SP.06		Uses a line of best fit and margin of error to analyze data, including comparing, explaining, interpreting, evaluating, making predictions, describing trends, drawing, formulating, and justifying conclusions.
MA.12.SP.07		Explains in words and identifies the difference between experimental and theoretical probability of independent and dependent events, including geometric probabilities.
MA.12.SP.08		Uses probability and counting techniques to analyze data to make predictions about the probability of independent and dependent events as a basis for solving real world problems.
PROBLEM SOLVING		
MA.12.PS.01		Designs, conducts, analyzes and communicates the results of a multi-stage probability experiment.
MA.12.PS.02		Applies multi-step, integrated, mathematical problem-solving strategies
MA.12.PS.03		Verifies the answer by using an alternative strategy
MA.12.PS.04		Represents mathematical problems numerically, graphically, and/ or symbolically; communicates math ideas in writing; or uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions
MA.12.PS.05		Uses methods of proof including direct, indirect, and counterexamples to validate conjectures
MA.12.PS.06		Uses real-world contexts such as global issues and careers

KPBSD Number		Level 13 - Trigonometry
NUMERATION		
MA.13.NU.01		Applies the properties of six Trigonometric functions
MA.13.NU.02		Converts degrees to radian and back, and graphs on coordinate plane
MA.13.NU.03		Describes or evaluates the use of inverse operations (degrees/radians, reciprocal identities, cofunction).
MA.13.NU.05		Describes or evaluates circular functions of Real Numbers
MA.13.NU.09		Describes or illustrates the effects of arithmetic operations on real numbers including matrices.
MA.13.NU.11		Identifies and applies commutative, identity, associative, inverse, or distributive properties to real numbers and variables(factors trinomials).
MA.13.NU.15		Identifies or writes the prime factorization of a variable expression using exponents.
MA.13.NU.16		Describes or illustrates, simplifies right triangle properties.
MA.13.NU.17		Uses properties of exponents to add, subtract, multiply, and divide polynomials, multiply binomials, and factor trinomials using various methods.
ESTIMATION & COMPUTATION		
MA.13.EC.01		Using estimation, explains why one strategy is more appropriate than another and determines why the estimation result is greater or less than the exact answer.
MA.13.EC.05		Solves a variety of problems involving linear and angular velocity
MA.13.EC.07		Applies basic operations with real numbers using powers and scientific notation.
MEASUREMENT		
MA.13.ME.01		Uses measurement techniques in a variety of situations using dimensional analysis.
MA.13.ME.02		Applies indirect methods to find missing dimensions in real world applications, including the six trig functions
MA.13.ME.03		Applies right triangles and trigonometry (sine, cosine, tangent) to find missing dimensions in real world applications.
FUNCTIONS & RELATIONS		
MA.13.FR.01		Identify, extend and graph patterns up to the nth term, represented in tables, sequences, graphs or in problem situations for families of functions: Trig functions, world situations.
MA.13.FR.02		Generalizes equations and verifies trig identities
MA.13.FR.03		Models (graphically or algebraically) and solves trig equations, including real world situations.
MA.13.FR.04		Identify, extend and graph patterns up to the nth term of trig functions
MA.13.FR.05		Apply sum, difference, double-angle, and half-angle formulas to simplify and expression
MA.13.FR.06		Solve inverse trig functions and equations
MA.13.FR.07		Rewrite, and graph exponential and logarithmic functions
MA.13.FR.08		Evaluate and solve logarithmic functions (change-of-base)

KPBSD Number		Level 13 - Trigonometry (continued)
GEOMETRY		
MA.13.GO.01		Identifies, analyzes, compares and uses the properties of oblique triangles (law of sines and cosines)
MA.13.GO.02		Identifies, analyzes, compares and uses the properties of plane figures central angles, chords and inscribed arcs.
MA.13.GO.03		Draw a sketch and use vectors and dot product to solve problems
MA.13.GO.04		Uses complex numbers to solve polar equations
MA.13.GO.05		Uses transformations to show congruence and similarity of figures on a coordinate plane.
MA.13.GO.06		Calculates the area of polygons, volume and surface area of spheres and compound solids.
MA.13.GO.07		Graphs a line segment, absolute values, square root, exponential function on a coordinate grid
MA.13.GO.08		Generalizes and graphs quadratic equations and inequalities on a coordinate grid, identifies a solution, and determines their relationship (concave up or down, vertex, symmetry, focus directrix).
MA.13.GO.09		Generalizes and graphs conic sections on a coordinate gird, identifies a solution, and determines their relationship (concave up or down, vertex, symmetry, focus directrix).
STATISTICS & PROBABILITY		
MA.13.SP.02		Classifies and organizes data by designing, collecting, organizing, displaying and explaining the classification of data in real world problems using information from tables or graphs that display two or more sets of data.
MA.13.SP.03		Uses information from a display to solve a problem and analyze the validity of statistical conclusions in real world applications.
MA.13.SP.05		Uses and justifies the range and measures of central tendency, including standard deviation to determine the best representation of the data for a real world application.
MA.13.SP.06		Uses a line of best fit and margin of error to analyze data, including comparing, explaining, interpreting, evaluating, making predictions, describing trends, drawing, formulating, and justifying conclusions.
MA.13.SP.07		Explains in words and identifies the difference between experimental and theoretical probability of independent and dependent events, including geometric probabilities.
MA.13.SP.08		Uses probability and counting techniques to analyze data to make predictions about the probability of independent and dependent events as a basis for solving real world problems.
PROBLEM SOLVING		
MA.13.PS.01		Designs, conducts, analyzes and communicates the results of a multi-stage probability experiment.
MA.13.PS.02		Applies multi-step, integrated, mathematical problem-solving strategies
MA.13.PS.03		Verifies the answer by using an alternative strategy
MA.13.PS.04		Represents mathematical problems numerically, graphically, and/ or symbolically; communicates math ideas in writing; or uses appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions
MA.13.PS.05		Uses methods of proof including direct, indirect, and counterexamples to validate conjectures
MA.13.PS.06		Uses real-world contexts such as global issues and careers