



STATE OF NEVADA

OCCUPATIONAL SKILL STANDARDS FOR COMPUTER-AIDED DRAFTING & DESIGN

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Introduction

The Department of Education has undertaken an ambitious effort to develop statewide occupational skill standards. The standards in this document are for Computer-Aided Drafting and Design (CADD) programs and are designed to clearly state what the student should know and be able to do upon completion of an advanced high-school program.

The writing team determined that any statewide skill standards for CADD programs must follow, as closely as possible, nationally, industry-recognized standards. A key resource document used for the development of the standards was the CADD Skill Standards developed by the National Coalition for Advanced Manufacturing (NACFAM).

These exit-level standards are designed for advanced programs, for students completing the third level of a three- or four-year CADD program. Students at the appropriate level of instruction will be expected to demonstrate competence for all performance indicators in the “meets standard” domains for each performance standard. Teachers are encouraged to use them for to focus curriculum objectives for entry-level programs, also.

The standards are organized as follows:

Content Standards are general statements that identify major areas of knowledge, understanding, and skills students are expected to learn in key subject and career areas by the end of the program. The content standards for CADD are organized according to the four organizational areas define by the NACFAM standards. Two additional content standards enable the student to develop awareness and skill in related disciplines and employability skills.

Following each Content Standard are a number of **Performance Standards**. Performance Standards identify the more specific components of each content standard and define the expected abilities of students within each content standard.

Each Performance Standard is analyzed into specific **Performance Indicators**. Performance Indicators are very specific criteria statements for determining whether a student exceeds the standard, meets the standard, or whose performance approaches the standard. Performance Indicators may also be used as learning outcomes which teachers can identify as they plan their program learning objectives.

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CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.1 The student will create various geometric constructions.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Calculate areas of complex geometric shapes • Produce complex geometric shapes • Plot curves from existing data
MEETS STANDARDS	1.1.1 Construct circles and arcs 1.1.2 Divide lines & arcs into equal parts 1.1.3 Construct angles 1.1.4 Construct polygons 1.1.5 Construct tangents 1.1.6 Construct irregular geometric shapes
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Define geometric terms • Recognize various geometric shapes by name

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.2 The student will demonstrate appropriate measuring & scaling techniques.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Apply scale conversions • Utilize volumetric measurements
MEETS STANDARDS	1.2.1 Measure object size and area 1.2.2 Determine appropriate scale 1.2.3 Apply the scale types 1.2.4 Develop illustrations utilizing metric and English measuring systems 1.2.5 Transcribe illustrations accurately 1.2.6 Develop illustrations in appropriate scale
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Describe the necessity of scaling of objects • Distinguish the scale types • Determine linear measurements • Explain metric and English measuring systems • Apply basic mathematics related to scaling and measurement

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.3 The student will demonstrate conventional drafting practices.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create title blocks with attributes • Create drawing composition and layout • Compose appropriate annotations
MEETS STANDARDS	1.3.1 Select drafting media 1.3.2 Complete title blocks 1.3.3 Select appropriate drawing composition and layout 1.3.4 Apply sketching techniques 1.3.5 Utilize proper line techniques 1.3.6 Produce drawing from sketches 1.3.7 Apply symbols to industry standards 1.3.8 Apply appropriate annotations to drawings
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify line types • State purpose of annotations • Recognize annotation standards • Identify drafting media types • Recognize the use of drafting symbols • Reproduce drawing composition & layout • Explain the use of title blocks

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.4 The student will create multi-view drawings using orthographic projection.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Construct secondary auxiliary views • Develop revolution drawings
MEETS STANDARDS	1.4.1 Determine the principal view 1.4.2 Project from an existing view to create additional views 1.4.3 Construct and arrange the 6 standard views 1.4.4 Apply line types 1.4.5 Construct sectional views 1.4.6 Construct primary auxiliary views 1.4.7 Create threads and fasteners 1.4.8 Apply dimensions
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Describe the relationship of orthographic views • Sketch 6 standard views • Identify line types • Describe auxiliary views • Explain sectional views • Explain the need for dimensions

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.5 The student will apply dimensions and annotation.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Develop geometric dimensioning and tolerancing feature control frame • Develop coordinate tolerancing • Evaluate dimension accuracy • Determine thread designations • Assign alternate units
MEETS STANDARDS	1.5.1 Select appropriate dimension style 1.5.2 Place dimensions and annotation 1.5.3 Transcribe geometric dimensioning and tolerancing feature control frame 1.5.4 Transcribe coordinate tolerancing 1.5.5 Place thread designations 1.5.6 Prepare bill of materials
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Describe the concept of geometric dimensioning and tolerancing feature control frame • Identify tolerancing concepts • Differentiate between dimension styles • List rules of dimensioning • Explain thread designations

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.6 The student will create pictorial drawings.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create 2-point perspective drawings • Create 3-point perspective drawings • Create dimetric drawings • Create trimetric drawings • Create isometric sections • Create exploded isometrics
MEETS STANDARDS	1.6.1 Create oblique drawings 1.6.2 Create isometric drawings 1.6.3 Create 1-point perspective drawings
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify oblique drawings • Identify axonometric drawings • Identify perspective drawings

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 1.0: The student will develop and use fundamental drafting skills.

Performance Standard 1.7 The student will create development drawings and models.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Demonstrate proficiency in the application of triangulation transition developments • Construct a development of intersecting pieces • Recommend types of seams
MEETS STANDARDS	1.7.1 Construct a parallel line development 1.7.2 Construct a radial development 1.7.3 Construct a pyramid triangulation development 1.7.4 Determine proper placement of tabs 1.7.5 Calculate seam allowances 1.7.6 Assemble development models
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Define developments • List the major kinds of developments • Identify basic seam types • Explain the purpose of tabs

Nevada Academic Standards Correlation:

**CADD
Performance Level Descriptors**

Content Standard 2.0: The student shall demonstrate proficiency in fundamental computer skills.

Performance Standard 2.1 The student will determine fundamental safety and ergonomic factors in the CADD work environment.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Design and defend an ideal workstation • Critique workstation designs
MEETS STANDARDS	<p>2.1.1 Demonstrate personal safety involving electrical and mechanical hazards</p> <p>2.1.2 Describe the safety procedures as outlined on OSHA Materials Safety Data Sheets</p> <p>2.1.3 Summarize the ergonomic factors involved in CADD workstation configuration</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify consequences of disregarding safety rules • Identify components of a CADD workstation

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 2.0: The student shall demonstrate proficiency in fundamental computer skills.

Performance Standard 2.2	The student will maintain, operate and adjust computer hardware.
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Perform maintenance and adjust input and output devices based on the user’s manuals • Assess and customize hardware configurations
MEETS STANDARDS	2.2.1 Demonstrate the maintenance procedures of equipment based on the users’ manual 2.2.2 Demonstrate the procedures for using input devices (mouse, keyboard, digitizing tablets, etc) 2.2.3 Demonstrate the procedures for using output devices (plotters/printers) 2.2.4 Detect the current hardware configurations 2.2.5 Demonstrate the use of varied storage media
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify the accepted practices for maintenance of computer components • Identify procedures for using input devices • Identify procedures for using output devices • Identify system requirements

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 2.0: The student shall demonstrate proficiency in fundamental computer skills.

Performance Standard 2.3 The student will demonstrate proficiency in common operating systems and software.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Download attachments and software • Install and uninstall software • Generate reports from common industry software • Import and export files • Configure network connections
MEETS STANDARDS	2.3.1 Adhere to local “Acceptable Use Policy” 2.3.2 Demonstrate basic proficiency in current operating system 2.3.3 Utilize common industry software 2.3.4 Manipulate files 2.3.5 Utilize search engines
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Recognize available industry software • Access the world wide web with common web browsers • Review file management techniques • Review the local “Acceptable Use Policy”

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 3.0: Students shall demonstrate proficiency in fundamental CADD skills.

Performance Standard 3.1 The student will perform drawing setup and layout.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Develop layering schemes • Create title blocks • Create plot style tables • Reference external drawings
MEETS STANDARDS	3.1.1 Select existing title blocks 3.1.2 Set system variables (grid, snap, and modes) 3.1.3 Determine scaling factors 3.1.4 Create layers utilizing layering standards 3.1.5 Create template files 3.1.6 Create paper space layouts 3.1.7 Utilize paper space 3.1.8 Create and scale view ports 3.1.9 Utilize plot style tables
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Utilize preexisting templates • Recognize scaling factors • Place object on correct layer • Identify system variables

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 3.0: Students shall demonstrate proficiency in fundamental CADD skills.

Performance Standard 3.2	The student will create, apply and modify annotations.
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Import and export text styles • Incorporate Geometric Dimensioning and Tolerancing (GDT) • Create and use symbols
MEETS STANDARDS	3.2.1 Create a text style 3.2.2 Modify text styles 3.2.3 Place text based on industry standards 3.2.4 Create dimension styles 3.2.5 Modify dimension styles 3.2.6 Place dimensions based on industry standards 3.2.7 Use industry standard symbols to annotate illustrations
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Determine text placement based on industry standards • Define and describe industry standard text styles • Determine dimension placement based on industry standards • Define and describe industry standard dimension styles • Identify industry standard symbols

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 3.0: Students shall achieve competence in fundamental CADD skills.

Performance Standard 3.3	The student will construct and manipulate problems using the Cartesian Coordinate System.
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Customize coordinate systems by modifying name, location and origin • Utilize the Z-axis
MEETS STANDARDS	3.3.1 Calculate input coordinates 3.3.2 Manipulate coordinate system 3.3.3 Construct objects using the Cartesian Coordinate System (absolute, relative, polar)
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Describe the Cartesian Coordinate System (x, y, z) • Identify the 3 input systems used in the Cartesian Coordinate System

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 3.0: Students shall achieve competence in fundamental CADD skills.

Performance Standard 3.4 The student will create and modify geometric entities utilizing CADD command sequences.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create custom tool bars • Create and utilize blocks • Create LISP routines
MEETS STANDARDS	3.4.1 Utilize keyboard entry, menus, and tool bars to invoke CADD commands 3.4.2 Utilize drawing aids to ensure accuracy 3.4.3 Create and modify objects using CADD commands 3.4.4 Assign properties to objects 3.4.5 Access help resources
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify help resources • Describe the different methods to interface with a CADD system • List drawing aids • Describe object properties

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 3.0: Students shall achieve competence in fundamental CADD skills.

Performance Standard 3.5 The student will utilize media output.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Use the batch plot function • Assign a driver to the CADD program • Change output media
MEETS STANDARDS	3.5.1 Determine plottable areas for assigned plotter 3.5.2 Utilize plot preview function 3.5.3 Plot drawings to proper scale 3.5.4 Create plot (.plt) file
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify preview approaches • Review drawing utilizing “scale to fit”

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.1 Students will develop symbols, attributes, and libraries.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create nested blocks • Export attribute data
MEETS STANDARDS	<p>4.1.1 Create and save symbols</p> <p>4.1.2 Utilize symbols</p> <p>4.1.3 Edit symbols</p> <p>4.1.4 Assign attributes to symbols</p> <p>4.1.5 Edit attributes</p> <p>4.1.6 Create symbol libraries</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Describe the use of symbols • Explain symbol attributes • Use symbol libraries • Differentiate attribute types

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.2 Students will apply appropriate geometric dimensioning and tolerancing (GDT) standards.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Determine GDT parameters • Determine datum surfaces • Determine where GDT would be used in part design
MEETS STANDARDS	<p>4.2.1 Set dimension style to display basic dimensions</p> <p>4.2.2 Create and edit feature control frames according to industry standards</p> <p>4.2.3 Identify datum references</p> <p>4.2.4 Calculate tolerance zone using material condition</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify symbols used in GDT • Explain circular tolerance vs coordinate tolerance zones • Explain Maximum Material Condition/Least Material Condition • Explain the concept of basic dimensions • Identify industry standards

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.3 Students will output drawings.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Output to a device via the Internet • Plot to raster images • Configure CADD program to print in network configuration • Use custom paper sizes • Compress files for e-transmittal • Publish drawings to the Web
MEETS STANDARDS	<p>4.3.1 Change output media 4.3.2 Assign a driver to the CADD program 4.3.3 Create plot style tables 4.3.4 Develop layering schemes 4.3.5 Create title blocks 4.3.6 Reference external drawings 4.3.7 Create paper space layouts 4.3.8 Use batch plot function</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Utilize paper space • Create template files • Determine scaling factors • Create layers utilizing layering standards • Select existing title blocks • Set system variables (grid, snap, and modes) • Utilize plot style tables • Plot drawings to proper scale • Determine plot area for assigned plotter • Utilize plot preview function • Create plot (.plt) file

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.4 Students will develop and display three dimensional models.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create multi-view layouts from solid models • Create shaded and rendered objects • Apply surface textures and materials to models • Create backgrounds for three dimensional models • Describe Spherical and Cylindrical three dimensional coordinate systems
MEETS STANDARDS	<p>4.4.1 Manipulate coordinate systems</p> <p>4.4.2 Create wire frame objects</p> <p>4.4.3 Place three dimensional surfaces</p> <p>4.4.4 Display three dimensional objects from any viewpoint</p> <p>4.4.5 Develop three dimensional solid models</p> <p>4.4.6 Edit the shape and configuration of solid models</p> <p>4.4.7 Analyze a solid model for its physical properties</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Construct elementary extruded two dimensional objects • Identify three dimensional surface models • Describe three dimensional solid models • Explain the right hand rule for the X, Y, and Z-axes • Describe the function of a rectangular coordinate system

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.5 Students will develop and construct presentation drawings.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Use fog to create the appearance of depth and distance • Create background for model • Locate and manipulate landscaping objects • Develop multiple camera angles • Convert from raster to vector objects
MEETS STANDARDS	<p>4.5.1 Assign camera locations</p> <p>4.5.2 Place light sources</p> <p>4.5.3 Apply surface textures and materials to models</p> <p>4.5.4 Create shaded and rendered drawings</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Save views, scenes, and image files • Identify common raster file types • Identify common vector file types

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 4.0: Students shall demonstrate proficiency in advanced CADD skills and techniques.

Performance Standard 4.6 Students will customize a CADD working environment.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Develop multiple user preference types • Develop LISP routines • Work with toolbar flyouts • Program with visual basic • Program with C+
MEETS STANDARDS	<p>4.6.1 Customize user preferences 4.6.2 Customize graphic symbols 4.6.3 Create custom tool bars/buttons 4.6.4 Customize pull down menus 4.6.5 Use simple LISP routines</p>
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify current CADD environment • Identify current user preferences • Choose appropriate tool bars

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 5.0: Students will demonstrate CADD skills related to various disciplines.

Performance Standard 5.1 Students will demonstrate drafting concepts as related to basic manufacturing processes.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Design a foundry produced product • Design a machine tooled product • Design a welded product • Prepare drawings for computer numerical control (CNC) processes
MEETS STANDARDS	5.1.1 Prepare drawings for basic machine tool processes 5.1.2 Prepare drawings for welding processes 5.1.3 Prepare drawings for molding, foundry, and forging processes
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Describe molding, foundry, and forging processes • Describe standard machine processes • Identify standard welding symbols • Identify common stock forms

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 5.0: Students will demonstrate drafting skills related to various disciplines.

Performance Standard 5.2 Students will demonstrate drafting concepts as related to basic architectural design.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Apply applicable building codes to plan • Prepare a set of architectural building plans
MEETS STANDARDS	5.2.1 Explain architectural design concepts related to floor plan designs 5.2.2 Prepare a floor plan from an existing plan 5.2.3 Place appropriate architectural symbols 5.2.4 Create an exterior elevation from an existing floor plan
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Identify architectural design and planning concepts • Identify basic construction terminology and materials • List drawings necessary for a building permit • Identify different architectural styles

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 5.0: Students will demonstrate drafting skills related to various disciplines.

Performance Standard 5.3 Students will demonstrate drafting concepts as related to basic geographic information systems (GIS) and civil engineering.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Explain spatial referencing and coordinate systems • Create a database • Produce thematic maps using multiple data sources • Produce a contour plan using land survey and GPS data • Produce a profile drawing • Create metadata • Design a civil engineering project
MEETS STANDARDS	<p>5.3.1 Determine the correct map projection to be used for a given scenario</p> <p>5.3.2 Utilize various data formats</p> <p>5.3.3 Determine appropriate data representation (points, lines, or polygons)</p> <p>5.3.4 Explain the uses of land surveys, global positioning systems, aerial photographs, topographic maps, and remote sensing image data</p> <p>5.3.5 Identify appropriate map symbols</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Identify the various map projection distortions, plane and aspects • Identify geographic data • Identify uses of GIS and GPS (Global Positioning System) • Explain the uses of metadata • Define civil engineering

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 5.0: Students will demonstrate drafting skills related to various disciplines.

Performance Standard 5.4 Students will demonstrate drafting concepts as related to basic electronics.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Create electronic symbol libraries • Evaluate accuracy of electronic drawings • Draw pictorial views of circuits
MEETS STANDARDS	5.4.1 Diagram schematics 5.4.2 Prepare wiring diagrams 5.4.3 Produce circuit board artwork
APPROACHES STANDARDS	<ul style="list-style-type: none"> • Recognize different types of electronic drawings • Identify electronic symbols

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.1 Students shall demonstrate problem-solving skills.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Revise a drawing based on information gained through research of alternative solutions • Evaluate an action plan for a design solution • Develop methods to analyze the advantages and disadvantages of alternative solutions • Evaluate the benefits of solving a design problem
MEETS STANDARDS	<p>6.1.1 Solve a design problem using the appropriate steps in the problem-solving process</p> <p>6.1.2 Demonstrate brainstorming techniques</p> <p>6.1.3 Examine and explain the advantages and disadvantages of alternative solutions to one or more problems</p> <p>6.1.4 Create an action plan based upon a solution to a design problem</p> <p>6.1.5 Identify the benefits of solving a design problem</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Identify the basic steps of the problem-solving process • Identify alternative solutions to a problem • Identify basic components of an action plan

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.2 Students shall demonstrate critical thinking skills.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Demonstrate the skills necessary to identify, analyze, and solve a design problem • Formulate, implement, and evaluate an action plan • Analyze how critical thinking skills affect work performance
MEETS STANDARDS	<p>6.2.1 Identify and explains the essential elements of the critical thinking process</p> <p>6.2.2 Demonstrate critical thinking skills necessary in the design process</p> <p>6.2.3 Explain how emotional thinking and logical thinking affect decision making in the design process</p> <p>6.2.4 Explain the difference between reliable and unreliable observations and statements of facts</p> <p>6.2.5 Recognize patterns or relationships through observation and discovery</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • State the importance of critical thinking in identifying, analyzing, and solving a design problem • Identify the difference between opinion and fact • Define emotional and logical thinking • Identify steps of critical thinking

Nevada Academic Standards Correlation:

**CADD
Performance Level Descriptors**

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.3 Students shall demonstrate the ability to speak, write, and listen effectively.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Describe and use techniques to improve visual communication • Identify, research, prepare, and deliver a CADD related presentation • Prepare technical documents • Present and defend a design solution • Compete in a SkillsUSA–VICA job skill demonstration and/or public speaking contest •
MEETS STANDARDS	<p>6.3.1 Explain the benefits of effective communication skills in the workplace</p> <p>6.3.2 Effectively interpret and respond to verbal and nonverbal instructions</p> <p>6.3.3 Demonstrate proper telephone etiquette</p> <p>6.3.4 Effectively communicate thoughts, ideas, and information in writing and drawing</p> <p>6.3.5 Organize ideas, communicate orally, and effectively demonstrate job skills to others</p> <p>6.3.6 Locate, understand, and interpret written information in documents such as manuals, graphs, schedules, sketches, and drawings</p> <p>6.3.7 Select and utilize an appropriate medium for conveying messages with dignity and respect</p> <p>6.3.8 Organize information into the appropriate format in accordance with standard practices, which includes prewriting, drafting, proofreading, editing/revising, and preparing a final copy</p> <p>6.3.9 Demonstrate sensitivity to cultural and physical diversity in communication</p> <p>6.3.10 Identify common communication barriers and methods for improving communication</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Define communication • Explain the benefits of effective communication in the workplace • Discuss CADD as a form of visual communication • Explain how cultural and physical diversity effect communication • Identify applicable medium for conveying messages

Nevada Academic Standards Correlation:

STATE BOARD APPROVED 4/12/03

CADD

Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.4 Students shall demonstrate the ability to select, apply, and maintain appropriate technology.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Diagnose and make necessary corrections or improvements to a CADD system • Critique the use, benefits, and cost of a technologically advanced CADD system • Analyze the impact of technological changes on one or more aspects of CADD by researching current literature • Compete in a state-level SkillsUSA–VICA drafting contest
MEETS STANDARDS	<p>6.4.1 Demonstrate basic keyboarding techniques</p> <p>6.4.2 Utilize other input devices</p> <p>6.4.3 Utilize various electronic research methods</p> <p>6.4.4 Create and store CADD drawings and office documents</p> <p>6.4.5 Investigate and explain the use, benefits, and costs of technological developments in the CADD environment</p> <p>6.4.6 Identify and demonstrate the appropriate use of technology to enhance the efficiency of the CADD environment</p> <p>6.4.7 Demonstrate routine maintenance and repair of technological equipment, installing and configuring software, connecting peripheral devices</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Recognize and describe the use of existing office software • Use an Internet browser to locate specific Web sites • Describe the basic computer input devices

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.5 Students shall demonstrate leadership and teamwork skills.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Analyze the stages of group development • Wear professional attire • Demonstrate leadership ability within a group or a team • Compromise and/or build consensus within a group and summarize the decision of the group while maintaining respect for diverse viewpoints • Complete levels 1-3 of the SkillsUSA–VICA Professional Development Program • Campaign for a local SkillsUSA–VICA chapter office • Serve as a committee chair in a local SkillsUSA–VICA chapter
MEETS STANDARDS	<p>6.5.1 Work cooperatively with others when given a group design project</p> <p>6.5.2 Explain traits necessary to effectively lead and influence individuals and groups</p> <p>6.5.3 Demonstrate appropriate attitudes and behaviors for effective leadership</p> <p>6.5.4 Demonstrate respect for team members, team processes and team goals</p> <p>6.5.5 Participate in the implementation of a group’s decision and evaluates the results</p> <p>6.5.6 Demonstrate the qualities of an effective leader and team member</p> <p>6.5.7 Describe the importance of a company dress code</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Explain the importance of groups • Explain how to organize groups • Dress according to school dress code

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.6 Students shall demonstrate sound workplace ethics.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Assume responsibility for decisions and actions • Demonstrate time-management skills and cost-effective practices
MEETS STANDARDS	<p>6.6.1 Develop personal work ethics through a vocational experience</p> <p>6.6.2 Describe the importance of ethics practiced in the workplace</p> <p>6.6.3 Demonstrate regular attendance, promptness, and the willingness to follow instructions and complete an assigned task</p> <p>6.6.4 Demonstrate appropriate personal and professional attitudes and behaviors</p> <p>6.6.5 Maintain a safe, clean, and organized work area</p> <p>6.6.6 Demonstrate awareness of legal responsibilities related to individual performance, safety and customer satisfaction</p> <p>6.6.7 Demonstrate knowledge of various types of harassment</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • List the important ethics in the workplace • Meet attendance standards • Describe organized workplace • Identify appropriate responses to unethical actions

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.7 Students shall demonstrate the ability to effectively manage resources in high-performance workplaces.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Recognize the individual roles of team members, delegate tasks, and provide feedback on performance • Acknowledge and utilize the skills, abilities, and input of all members of a team • Develop an action plan to accomplish tasks within a given time frame
MEETS STANDARDS	<p>6.7.1 Develop time schedules and prioritize tasks for job assignments</p> <p>6.7.2 Students will identify the important resources needed in a CADD work station</p> <p>6.7.3 Identify and organize the material resources and space requirements needed to complete design projects</p> <p>6.7.4 Effectively use technology at its highest level to complete a job assignment</p> <p>6.7.5 Demonstrate cooperation and leadership skills in the school and/or work environments</p> <p>6.7.6 Use effective time management skills</p> <p>6.7.7 Estimate costs related to given design solution</p> <p>6.7.8 Recognize the need for management skills in the workplace with regard to stress, anger management, and substance abuse</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • List effective time management skills • Use technology to complete assignments • Utilize materials, tools, and processes to complete a task related to a career selection • Read and follow instructions from manuals on the use and care of materials, tools, and equipment • Maintain a clean, organized, and safe workstation • Identify traits needed for cooperation and leadership in a team at school or in a workplace setting • Identify the material resources and space requirements needed to complete an assignment

Nevada Academic Standards Correlation:

CADD
Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.8 Students shall demonstrate career planning and development skills.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Develop a community service or job shadowing project • Develop an education/training plan to fulfill long-term career goals • Define advantages and disadvantages of self-employment or working for various sizes and types of businesses • Critique results of a job interview • Develop a proposal for an organized community-service project • Compete in a state level SkillsUSA–VICA job interview contest
MEETS STANDARDS	<p>6.8.1 Prepare a job application</p> <p>6.8.2 Prepare a personal résumé</p> <p>6.8.3 Complete a personal aptitude and interest inventory</p> <p>6.8.4 Participate in a job interview</p> <p>6.8.5 Establish short-term career goals</p> <p>6.8.6 Establish long-term career goals</p> <p>6.8.7 Use the Nevada Career Information System (CIS) or a similar computer-based program to research careers in a chosen field</p> <p>6.8.8 Participate in an organized job shadowing activity</p> <p>6.8.9 Participate in a community service project</p> <p>6.8.10 Construct a career portfolio</p> <p>6.8.11 Adhere to workplace requirements, policies, and procedures</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Locate employment opportunities • Identify job requirements for entry-level positions in the CADD industry • Identify general conditions for employment • Identify educational/training requirements for related CADD field • Complete a personal aptitude and interest inventory • Identify the elements of goals setting • Identify CADD related careers • Identify job interview skills • Identify the components of a career portfolio

Nevada Academic Standards Correlation:

CADD

Performance Level Descriptors

Content Standard 6.0: Students shall achieve competence in workplace readiness, career development, and lifelong learning.

Performance Standard 6.9 Students shall demonstrate job retention and lifelong learning skills.	
EXCEEDS STANDARDS	<ul style="list-style-type: none"> • Maintain an electronic portfolio • Create a plan for lifelong learning • Create a presentation illustrating interpersonal skills needed for job retention • Adapt new knowledge and skills in changing situations • Analyze how work life is affected by families and how families are affected by work life
MEETS STANDARDS	<p>6.9.1 Maintain an employment/career portfolio</p> <p>6.9.2 Identify strategies for balancing work and family roles</p> <p>6.9.3 Demonstrate understanding of the need for lifelong learning in a rapidly changing job market</p> <p>6.9.4 Identify strategies to maintain employment in the face job reductions</p> <p>6.9.5 Develop long-term career-planning strategies</p> <p>6.9.6 Identify various educational options needed for job retention</p> <p>6.9.7 Identify and model sound workplace ethics, such as loyalty, punctuality and initiative</p> <p>6.9.8 Demonstrate interpersonal skills needed for job retention</p>
APPROACHES STANDARD	<ul style="list-style-type: none"> • Recognize the importance of a portfolio • Identify options for lifelong learning • Identify interpersonal skills needed for job retention • Identify jobs with opportunity for advancement • Recognize the importance of career planning

Nevada Academic Standards Correlation:

CROSSWALK OF CADD STANDARDS AND ACADEMIC STANDARDS

Syllabus Objective Performance Indicators	Math Standards Academic Standards
1.1.1	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.1.2	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.1.3	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math) Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>

Syllabus Objective Performance Indicators	Math Standards Academic Standards
1.1.4	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math) Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.1.5	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.1.6	<p>4.12.1 (Math) Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, chords, secants, and tangents) to solve practical problems.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math) Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>

Syllabus Objective

Math Standards

Performance Indicators	Academic Standards
1.2.1	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math)</p> <p>Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>
1.2.2	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>
1.2.3	<p>2.12.3 (Math)</p> <p>Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math)</p> <p>Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.2.4	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.2.5	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p>
1.2.6	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>

Performance Indicators	Academic Standards
	4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.3.1	
1.3.2	
1.3.3	
1.3.4	<p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.3.5	
1.3.6	<p>2.12.3 (Math)</p> <p>Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g.</i>, $I = PRT$ or $R = I/PT$), solving for the needed variable as necessary in given situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.1 (Math)</p> <p>Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g.</i>, <i>angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.3.7	<p>2.12.3 (Math)</p> <p>Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g.</i>, $I = PRT$ or $R = I/PT$), solving for the needed variable as necessary in given situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p>
1.3.8	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.4.1	4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
1.4.2	3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems. 4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems. 4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
1.4.3	3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems. 4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems. 4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
1.4.4	
1.4.5	3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems. 4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems. 4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.4.6	<p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.4.7	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p>

Performance Indicators	Academic Standards
	<p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.4.8	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.5.1	
1.5.2	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math)</p> <p>Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>
1.5.3	<p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math)</p> <p>Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p>
1.5.4	<p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>

Performance Indicators	Academic Standards
	3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.

Syllabus Objective Performance Indicators	Math Standards Academic Standards
1.5.5	
1.5.6	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.4 (Math) Use and interpret consumer data (<i>e.g., amortization tables, tax tables, and compound interest charts</i>) to make informed financial decisions related to practical applications such as budget.</p>

Performance Indicators	Academic Standards
1.6.1	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.6.2	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p>

Performance Indicators	Academic Standards
	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.6.3	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g., $I = PRT$ or $R = I/PT$</i>), solving for the needed variable as necessary in given situations.</p>

Performance Indicators	Academic Standards
	<p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
1.7.1	<p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.7.2	<p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.7.3	<p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p>

Performance Indicators	Academic Standards
	<p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
1.7.4	
1.7.5	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p>
1.7.6	<p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p>

Syllabus Objective

Math Standards

Performance Indicators	Academic Standards
3.1.1	
3.1.2	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g.</i>, $I = PRT$ or $R = I/PT$), solving for the needed variable as necessary in given situations.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g.</i>, <i>linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>
3.1.3	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g.</i>, <i>linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>
3.1.4	
3.1.5	
3.1.6	
3.1.7	
3.1.8	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.3 (Math) Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g.</i>, $I = PRT$ or $R = I/PT$), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g.</i>, <i>linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
3.1.9	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
3.2.1	
3.2.2	4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
3.2.3	
3.2.4	
3.2.5	4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
3.2.6	
3.2.7	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
3.3.1	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
3.3.2	<p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
3.3.3	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in</p>

Performance Indicators	Academic Standards
	<p>problem situations.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
3.5.1	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p>
3.5.2	
3.5.3	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.3 (Math)</p> <p>Create and use different forms of a variety of equations, proportions, and/or formulas (<i>e.g.</i>, $I = PRT$ or $R = I/PT$), solving for the needed variable as necessary in given situations.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g.</i>, <i>linear</i>, <i>square units</i>, <i>cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p>
3.5.4	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
4.1.1	1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.
4.1.2	1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.
4.1.3	
4.1.4	
4.1.5	
4.1.6	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
4.2.1	
4.2.2	
4.2.3	
4.2.4	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
4.4.1	<p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
4.4.2	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math) Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
4.4.3	
4.4.4	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p>

Performance Indicators	Academic Standards
	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p>
4.4.5	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math) Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math) Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math) Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math) Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math) Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems.</p> <p>4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
4.4.6	<p>1.12.1 (Math) Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math)</p>

Performance Indicators	Academic Standards
	<p>Apply the properties and theories of the real number system to everyday situations.</p> <p>3.12.2 (Math)</p> <p>Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.</p> <p>3.12.3 (Math)</p> <p>Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math)</p> <p>Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.1 (Math)</p> <p>Identify and use the properties of polygons (<i>including interior and exterior angles</i>) and elements of circles (<i>e.g., angles, arcs, chords, secants, and tangents</i>) to solve practical problems.</p> <p>4.12.5 (Math)</p> <p>Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.</p> <p>4.12.6 (Math)</p> <p>Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.</p> <p>4.12.7 (Math)</p> <p>Apply the Pythagorean Theorem, its converse, properties of special right triangles, and right triangle trigonometry to solve practical problems.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
4.4.7	<p>1.12.1 (Math)</p> <p>Calculate and estimate sums, differences, products, quotients, powers, and roots using mental math, formulas, and algorithms.</p> <p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>4.12.9 (Math)</p> <p>Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles.</p>

Syllabus Objective Performance Indicators	Math Standards Academic Standards
4.5.1	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p>
4.5.2	<p>1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology.</p> <p>2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p>
4.5.3	
4.5.4	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
5.1.1	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
5.1.2	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
5.1.3	<p>.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
5.2.1	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.9 (Math)</p> <p>Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles.</p>
5.2.2	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>
5.2.3	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p>
5.2.4	<p>1.12.3 (Math)</p> <p>Apply the properties and theories of the real number system to everyday situations.</p> <p>2.12.5 (Math)</p> <p>Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.</p> <p>4.12.8 (Math)</p> <p>Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.</p>

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
5.3.1	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>5.12.5 (Math) Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups.</p>
5.3.2	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>5.12.5 (Math) Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups</p>
5.3.3	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>5.12.5 (Math)</p>

Performance Indicators	Academic Standards
	<p>Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups</p>
5.3.4	<p>2.12.2 (Math) Represent and solve problem using discrete structures including graphs and matrices, with and without technology</p> <p>3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.</p> <p>3.12.5 (Math) Use relationships (<i>e.g., proportions</i>) and formulas (<i>indirect measurement</i>) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.</p> <p>4.12.9 (Math) Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles.</p> <p>5.12.5 (Math) Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups</p>
5.3.5	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
6.1.1	1.12.3 (Math) Apply the properties and theories of the real number system to everyday situations. 2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology. 3.12.3 (Math) Distinguish and differentiate among the structures, language and uses of systems of measures (<i>e.g., linear, square units, cubic units</i>); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations. 4.12.8 (Math) Use tools, technology, and models to sketch, draw, and construct figures in order to solve problems and to demonstrate the properties of geometric figures.
6.1.2	
6.1.3	4.12.9 (Math) Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles.
6.1.4	
6.1.5	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
6.2.1	
6.2.2	
6.2.3	
6.2.4	4.12.9 (Math) Construct, justify and defend mathematical conclusions using logical, sequential, deductive reasoning supported by established mathematical principles.
6.2.5	

Syllabus Objective	Math Standards
Performance Indicators	Academic Standards
6.7.1	2.12.5 (Math) Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.
6.7.7	3.12.4 (Math) Use and interpret consumer data (<i>e.g., amortization tables, tax tables, and compound interest charts</i>) to make informed financial decisions related to practical applications such as budget