Secondary Course Syllabi

Course Offerings Listing

ART

Grade 7

Grade 7 Art

Grades 8-12

Art Foundations I

Grades 9-12

Art Foundations II
Advanced Art I
Advanced Art II
Advanced Art III
Advanced Art IV
Ceramics I
Ceramics II
Computer Graphics
Computer Graphics
Photography
AP Drawing
AP 2-D Design
AP 3-D Design
Advanced Studio (Offered only at Churchland High School)
Advanced Studio (Offered only at Churchland High School)
Advanced Studio Art History (Offered only at Churchland High School)
Drawing (Offered only at Churchland High School)
Independent Studio (Offered only at Churchland High School)
Media Exploration (Offered only at Churchland High School)

CAREERS AND TECHNICAL EDUCATION

Accounting
Advanced Marketing Coop
Building Maintenance
Architectural Drawing/Design (8437)
Business Law/Business Management
Introduction to Automotive Systems
Automotive Diagnostics I
Automotive Diagnostics II
Automotive Diagnostics III
Automotive Diagnostics IV
Communication Systems
Computer Applications
Computer Control and Automation (8421)
Computer Information Systems
Culinary Arts I
Diesel Engines I
Early Childhood Education Exploration
Economics and Personal Finance (6120)
Education for Employment I
Education for Employment II (9054)

CAREERS AND TECHNICAL EDUCATION cont'd

Education for Employment Coop
Electronics Technology I
Electronic Technology II
Electronics III
Emergency Medical Technician Basic (111)
Emergency Medical Technician Basic Clinical (120)
Engineering Drawing/Design
Fashion Marketing Co-op
Graphics Communication
Health Assistant I
Health Assistant II
Horticulture I
Horticulture II
Hotel/Motel Marketing
Introduction to Fashion Design and Merchandising
JROTC (Junior Reserve Officer Training Corp)
Keyboarding Applications
Legal Systems Administration
Life Planning
Manufacturing Technology
Marketing Co-op
Nutrition and Wellness (8229)
Office Administration
Office Administration Co-op
Principles of Business and Marketing
Technical Drawing/Design
Principles of Technology I
Principles of Technology II
Production Systems
Technical Drawing (8435)
Technology Foundations
Technology Transfer
Welding (8672)
Word Processing
Word Processing Co-op
Marine Electric

ENGLISH

Grade 7
Grade 7 English
Grade 8
Grade 8 English
Grade 9
Grade 9 English
Grade 10
Grade 10 English

ENGLISH cont'd

Grade 11

Grade 11 English

Grade 12

Grade 12 English
Advanced Placement English 12
Creative Writing
Dramatics I
Dramatics, Advanced
Journalism I
Journalism II
Journalism III
Mass Media
SAT Preparation
Speech
Study Skills

FOREIGN LANGUAGE

French

French I
French II
French III
French IV

Latin

Latin I
Latin II
Latin II
Latin IV
Latin V

Spanish

Spanish I
Spanish II
Spanish III
Spanish IV

HEALTH AND PHYSICAL EDUCATION

Grade 9

Health and Physical Education
Weight Training

Grade 10

Health and Physical Education
Weight Training

Grades 11 and 12

Health and Physical Education
Dance I
Dance II

MATHEMATICS

Grade 7

- Algebra I
- Grade 7 Mathematics

Grade 8

- Algebra I
- Geometry I
- Grade 8 Mathematics

Grades 9-12

- Algebra IA
- Algebra IB
- Algebra I
- Algebra II
- Algebra, Functions and Data Analysis
- Advanced Algebra/Trigonometry
- Computer Mathematics
- Discrete Mathematics
- Geometry
- Geometry Part I
- Geometry Part II
- Mathematical Analysis
- Personal Living and Finance
- SAT Prep
- Advanced Placement Calculus AB
- Advanced Placement Statistics
- College Seminar

MUSIC

Band

- Level I Beginning Band
- Level II Intermediate Band
- Level III Advanced Band
- Level IV Artist Band

Chorus

- Level I Beginning Chorus
- Level II Intermediate Chorus
- Level III Advanced Chorus
- Level IV Artist Chorus

Orchestra

- Level I Beginning Orchestra
- Level II Intermediate Orchestra
- Level III Advanced Orchestra
- Level IV Artist Orchestra

Comprehensive Music

- Comprehensive Music I (Beginning)
- Comprehensive Music II (Intermediate)
- Comprehensive Music III (Advanced—Offered only at Churchland High School)
- Comprehensive Music IV (Artist—Offered only at Churchland high School)

SCIENCE

Biology
Advanced Placement Biology
Biology II
Chemistry
Advanced Placement Chemistry
Earth Science I
Earth Science II
Earth Science II: Advanced Survey
Physics

SOCIAL STUDIES

US History 1865 to Present
Civics and Economics
High School Grades 9-12
World History and Geography to 1500
World History and Geography 1500 to the present
Citizenship Studies
Economics
Global Affairs
Advanced Placement US Government
Virginia and United States History
Advanced Placement US History
Virginia and United States Government
World Cultures I
World Cultures II
African-American History
Study Skills for World History/Geography to 1500

ART

Grade 7

Art 7

A. Color Schemes
B. Movement
C. Elements and Principals of Design
D. Line Variations
E. Graphic Design
F. Perspective Devices
G. Contour Drawing
H. Two-point Perspective
I. Elements and Principals in 2-D and 3-D
J. Geometric Forms in 3-D works of art
K. Representing and Interpreting Ideas
L. Graphic Arts Instruments and Devices
M. Technology
N. Problem Solving
O. Careers
P. Styles and Themes in Contemporary and Historical Works of Art
Q. Public Art and Monuments
R. Persuasive Techniques
S. Subjects, Themes and Symbols
T. Interpretations
U. Criteria for Judging
V. Ethical and Legal considerations
W. Analysis, Interpretation and Judgment
X. Life Experiences as Subject
Y. Create – The Artistic Process
Z. Influences of Time and Place
AA. Student Inquiry
BB. Social and Cultural Beliefs
CC. Sensory Responses to Art
DD. Investigate the Purpose of Art

Grades 8 - 12

Art Foundations I

I. First Nine Weeks
- A. Class procedures and expectations
- B. Elements and principles of design and the critique process
- C. Line: physical properties / expressive properties
- D. Shape: Categories of design application
- E. Space: positive and negative, use in 2D and 3D work
- F. Value: value scales, shading techniques

G. Texture: real, simulated
H. Form: distinguish from shape, relate to media
I. Color: color wheel, color schemes, expressive qualities

II. Second Nine Weeks
A. Drawing: gesture, contour, perspective, full value still life/face
B. Printmaking: object printing, block printing, pattern
C. Painting: media and techniques, color theory
D. Ceramics: basic construction, craftsmanship, history
E. Sculpture: materials, techniques: additive/subtractive

Grades 9-12

Art Foundations II

I. First Nine Weeks
A. Introduction to class procedures and expectations
B. Review elements and principles of design
C. Graphics Design/Package Design – calligraphy, font and log

II. Second Nine Weeks
A. Drawing
B. Painting
C. Sculpture
D. Ceramics

Advanced Art I and II (Art III, IV)

I. Drawing
II. Painting
III. Printmaking
IV. Sculpture
V. Research/Presentation of Independent Project
VI. Student Art Gallery Participation
VII. Digital Imaging/Digital Portfolio
VIII. The College Application

Ceramics I

I. First Nine Weeks
A. Introduction/review of elements and principles of design
B. Tool use and safety
C. Vocabulary
D. Design and craftsmanship
E. Hand building: slab, pinch pot, coil,
F. Wheel Introduction

Ceramics I cont'd

II. Second Nine Weeks
- A. Concept of form/function
- B. Decorative vs. functional
- C. Hand building: slabs, pinch pot, coil, armature
- D. Surface decoration i.e.: multicolored clay uses, sgraffito, inlays
- E. Glazing methods
- F. Wheel throwing techniques
- G. Symbols and cultural references
- H. Relief sculpture

Ceramics II

The student will . . .
- A. complete four pieces using either hand building or wheel throwing for all pieces
- B. complete functional and fine art pieces
- C. complete one assignment that has thrown and hand built elements
- D. cooperatively produce a sculpture of one or two parts - emphasis will be on integration of the units
- E. research and present information on the ceramic art of a geographic region
- F. interview a local potter or web research

Computer Graphics

I. First Nine Weeks
- A. History of Graphic Design
- B. Computer Literacy
- C. Adobe Photoshop
- D. Development of a Data Base
- E. Import Images
- F. Scan Images
- G. Digital Camera
- H. The Net as a Resource

II. Second Nine Weeks
- A. Webpage Design
- B. Business uses of Webpage Design
- C. Business Ethics
- D. Aesthetics of Commercial Printing
- E. Business Considerations of Commercial Printing
- F. Relationships with Business Clients
- G. Establishment of Design Teams
- H. Produce a prototype for each of the following:
  1. logo, letterhead, business card
  2. brochure or menu design
  3. product promotion or fine art exhibition promotional design
  4. package design, CD cover, magazine cover

Computer Graphics cont'd

I. Finalize Personal Website/portfolio

Photography

I. First Nine Weeks

A. Class expectation and procedures
B. Evolution of photography/Roles of
C. Elements and principles of design, critique process
D. Photography as a vehicle for expressing and interpreting feelings
E. Safety procedures
F. Equipment and materials
G. Basic photographic processes

II. Second Nine Weeks

A. Recognize work and artists: medium, period, style
B. Surface techniques
C. Manipulation and variables
D. Identify photographs by medium, period, style, and artist
E. Socially relevant themes
F. Impact on public opinion
G. Photography as an art form
H. Animation
I. Portfolio presentation

Advanced Studio and Advanced Studio Art History (Offered only at Churchland High School)

I. Mastery of art elements and principles

II. Rendering of the human figure

III. Architectural subjects

IV. Exploration of photographic process

V. Basic computer rendering

VI. Color schemes

VII. Creation of mood in the visual arts

VIII. Exploration of watercolors

IX. Non-traditional tools in painting

X. Experimentation in printmaking

Advanced Studio and Advanced Studio Art History cont'd

XI. Elements and principles in 3D design

XII. Bas-relief/Subtractive Processes

XIII. Plaster casting, Additive Processes

XVII. Folk art

Drawing (Offered only at Churchland High School)

I. Elements and principles of design

II. Critique process

III. Use of tools, materials

IV. Safety

V. Rendering 3D on a 2D surface

VI. Multi-media renderings

VII. Cultural context

VIII. Imagery

IX. Icons

X. Developed skills

XI. Exhibit production

XII. Local resources

XIII. Career opportunities

XIV. Chronological Survey of Western Art History

Independent Studio (Offered only at Churchland High School)

I. Portfolio creation

II. Scholarship applications

III. Portfolio reviews

Independent Studio cont'd

IV. Mini-internships in art related careers

V. Exploring personal imagery through 2D and 3D work

Media Exploration (Offered only at Churchland High School)

I. Elements and principles using multi-media

II. Critique process

III. Exploration of media

IV. 2D visual problems

V. Cultural context

VI. Use of tools, materials

VII. Safety

VIII. Imagery

IX. Career opportunities

X. Exhibit production

XI. Chronological Survey of Western Art

CAREER AND TECHNICAL EDUCATION

Accounting

I. Introduction to Accounting
- A. Course overview
- B. FBLA
- C. Accounting as a career

II. Accounting for a Service Business
- A. Starting a proprietorship
- B. Analyzing transactions into debit and credit parts
- C. Journalizing transactions
- D. Posing to a general ledger
- E. Integrating automated accounting
- F. Cash control systems
- G. Ingraining automated accounting

Accounting cont'd

H. Work sheet for a service business
I. Financial statements for a proprietorship
J. Recording, adjusting, and closing entries for a service business
K. Integrating automated accounting (end-of-fiscal-period work for proprietorship)

III. Accounting for a Merchandising Business
A. Journalizing purchases and cash payments
B. Journalizing sales and cash receipts
C. Posting to general and subsidiary ledgers
D. Integrating automated accounting (recording transactions)
E. Preparing payroll records
F. Payroll Accounting, taxes and reports
G. Integrating automated accounting (recording payroll transactions)
H. Work sheet for a merchandising business
I. Financial statements for a partnership
J. Recording, adjusting, and closing entries for a partnership

IV. Accounting for a Merchandising Business Organized as a Corporation
A. Recording purchases and cash payments using special journals
B. Recording sales and cash receipts using special journals
C. Accounting for un-collectible accounts receivable
D. Accounting for plant assets and depreciation
E. Accounting for inventory
F. Accounting for notes and interest
G. Integrating automated accounting

V. Employment Preparation
A. Letter of application
B. Resume
C. Job application
D. Interview techniques

Advanced Marketing Coop

I. Introduction to advanced Marketing and DECA
A. Course overview
B. DECA
C. Responsibilities of supervisory personnel

II. Management of Human Resources
A. Leadership styles
B. Employee orientation and training
C. Problem solving
D. Communications
E. Morale

Advanced Marketing Coop cont'd

III. Management of Goods and Services
- A. Stock control methods
- B. Merchandise Planning
- C. Pricing

IV. Management of Promotional Services
- A. Promotional mix
- B. Advertising

V. Management of Customer Relations and Services
- A. Customer service policies
- B. Credit

VI. Management of Security
- A. Losses
  1. Employee theft
  2. Shoplifting
- B. Safety and accidents

Building Maintenance

I. Introduction to Building Maintenance
- A. Course overview
- B. School/class requirements
- C. Student assessment
- D. Personal and shop safety
- E. VICA organization

II. Hand and Power Tools

III. Structural members of a Building

IV. Cleaning a Building
- A. Scheduled maintenance
- B. Preventative maintenance
- C. Fire safety plan

V. Building Mechanical Systems
- A. Electrical and lighting systems
- B. Plumbing and gas systems
- C. Heating, ventilation, and air conditioning systems
- D. Telephone, music, and audio/visual systems

VI. Grounds and Recreational Areas Maintenance

Building Maintenance cont'd

VII. Specials Applications
- A. Washers/dryers: use, repair, and replacement
- B. Building hardware: repair and replacement
- C. Windows and doors: use, repair, and replacement
- D. Keys and locks: repair, replacement and duplication
- E. Security methods
- F. Lighting: fixtures and devices
- G. Computers

Architectural Drawing/Design 8437

Course Description:

Students study the principles of architecture and construction techniques. Experiences include residential and commercial building designs, rendering, model making, structural details and community planning. This course uses standards or codes to prepare models for presentation.

I. Introduction to Architectural Drawing/Design
- A. General overview of course
- B. Architectural instruments/tools needed
- C. Dimensioning and scales
- D. Multi-view: board work and AutoCAD
- E. History of architecture
- F. Role of architecture in society
- G. Architectural styles

II. Preliminary Layout and Planning
- A. Individual room design
- B. Area planning
- C. Floor plans
- D. Windows and schedules
- E. Site plans
- F. Elevations

III. Structural Design
- A. Foundations
- B. Sill construction
- C. Floor framing
- D. Wall construction and section
- E. Cornice construction
- F. Roof construction
- G. Structural calculations

IV. Mechanical Components
- A. Electrical
- B. Plumbing
- C. Heating and air conditioning

Architectural Drawing/Design 8437 cont'd

V. Specifications and Cost Analysis
- A. Building codes
- B. Specifications
- C. Estimating and financing

VI. Pictorial
- A. Perspective drawings
- B. Shadows and renderings

VII. Architectural Models
- A. Structural models
- B. House models

Business Law/Business Management

I. Law, Justice, and You
- A. Course overview, student expectations, and FBLA
- B. Kinds of law
- C. Enforcing the law
- D. Crimes
- E. Torts
- F. Laws for minors

II. Contracts: Making Binding Agreements
- A. Offer and acceptance
- B. Mutual consideration
- C. Void and voidable agreements
- D. Proper form
- E. Ending contractual obligations
- F. Remedies for breach of contract

III. Business Organization
- A. Proprietorships and partnerships
- B. Corporate forms of business ownership

IV. Production and Marketing
- A. Product and service planning
- B. Nature and scope of marketing
- C. Purchasing and pricing
- D. Promotion

V. Finance
- A. Financial records in business
- B. Financial analysis of a business
- C. Financing a business
- D. Financial services

Introduction to Automotive Systems

1. Safety
2. EPA, OSHA Regulations
3. Tools and Equipment
4. Automobile Systems and Components
5. Repair and Estimation Software
6. Vehicle Maintenance, Inspection and Basic Repairs

Automotive Diagnostics I

1. Electrical Theory
2. Basic Circuits
3. Electrical Components
4. Circuit Testing and Diagnostics
5. Starting Systems
6. Charging Systems
7. Batteries
8. Wire Repair
9. Wiring Diagrams

Automotive Diagnostics II

1. 4 Stroke Cycle
2. Compression Testing
3. Vacuum Testing
4. Cylinder Leakage Tests
5. Ignition Systems
6. Fuel Systems
7. Scan Tools
8. Emission Controls

Automotive Diagnostics III

1. Wheels & Tires
2. Wheel & Tire Vibration
3. Suspension Systems
4. Steering Systems
5. Alignment Angles & Procedures
6. Driveability Diagnosis

Automotive Diagnostics IV

1. Hydraulic Circuits
2. Brake Measurements
3. Disc Brakes
4. Drum Brakes
5. Vacuum & Hydraulic Boosters

Automotive Diagnostics IV cont'd

6. Anti-lock Braking Systems
7. Traction Control and Vehicle Stability Control Systems
8. Virginia State Inspection

Communication Systems

I. Communicative Systems
- A. People to people/machine to people
- B. Machine to machine
- C. Components of a communications system

II. Telecommunication Systems
- A. Radio
- B. Television
- C. Audio
- D. Audio/Visual

III. Telecommunication Systems
- A. Telegraph
- B. Telephone
- C. Radio Telephone
- D. Ham and CD radio
- E. Satellites
- F. LAN
- G. WEB server

IV. Drafting Equipment/Techniques
- A. Equipment
- B. Types of drawing
- C. CAD

V. Graphic Communications
- A. Image generation
- B. Photography
- C. Transferring images

VI. Communications Enterprise
- A. Product package design
- B. Competition

Computer Applications

I. Keyboarding Review

II. Basic Computer Operations
- A. Load, access, and exit software
- B. Memory and disk space
- C. Creating directions
- D. System functions

III. Word Processing
- A. Applications
- B. Input procedures
- C. Formats
- D. Edit
- E. Printing

IV. Databases
- A. Applications
- B. Creating databases
- C. Integrating applications

V. Spreadsheets
- A. Applications
- B. Entering data and formulas
- C. Editing
- D. Integrating applications

VI. Graphics
- A. Applications
- B. Incorporating graphics into applications
- C. Creating graphics

VII. Security and Maintenance
- A. Security issues
- B. Confidentiality/copyrights
- C. Maintenance
- D. Safety

Computer Control and Automation (8421)

Course Description:

Students study a broad base of the technical aspects of computers and their application to production, transportation, and communication systems. This broad base includes computer equipment and operating systems, programming, control processing information, and social/cultural impact of computers.

I. Course Description

II. Using computers language and equipment.

III. Mathematical and scientific principles of electricity and electronics

IV. Principles of automated systems

V. Utilizing computers to solve technological problems in transportation

VI. Utilizing computers to solve technological problems in communications

VII. Using computer aided manufacturing to plan, produce, control, and manage automated processes

VIII. Solving technological problems with group activities

Computer Information Systems

I. Exploring Computer Concepts
- A. Impact on society
- B. Computer components
- C. Input/output devices
- D. Networking

II. Maintaining Equipment
- A. Safety
- B. Troubleshooting
- C. DOS/Windows operating systems
- D. Protection

III. Word Processing
- A. Editing
- B. Enhancement
- C. Tools

IV. Developing Spreadsheets
- A. Editing
- B. Enhancement
- C. Tools

V. Developing/Managing Databases

Computer Information Systems cont'd

A. Editing
B. Integrating a variety of applications

VI. Emerging Technologies
A. Virtual reality
B. Trends in information processing
C. Impact

VII. Telecommunications
A. Devices
B. Email

Culinary Arts I

I. Observing Kitchen Sanitation and Safety Measures
A. Maintain standards of personal hygiene and uniform cleanliness
B. Practice proper handling procedures of prevent food borne illnesses

II. Preparing for Food Production
A. Identify and operate large and small equipment for food production
B. Convert recipes
C. Plan menus for catered functions and plan preparation schedule

III. Managing the Finances of Catering Services
A. Cost account/price goods and services
B. Customer orders and customer bills

IV. Room Preparation and Service
A. Set up room and/or coordinate auxiliary services
B. Set up, serve, and replenish food and beverages

V. Career Opportunities in Catering
A. Identify career opportunities in catering
B. Investigate licenses, permits, requirements to operate a catering business

VI. Employment Skills
A. Job search and application procedures
B. Interviewing skills

VII. Preparing Seafood, Meats, and Poultry
A. Methods in preparation
B. Preparing meat, seafood, and poultry using a variety of methods

VIII. Preparing Fruits and Vegetables
A. Selection criteria for purchasing fruits and vegetables
B. Cooking fruits and vegetables according to assigned methods

Culinary Arts I cont'd

IX. Preparing Eggs and Diary Products
- A. Prepare eggs according to assigned method
- B. Prepare puddings and custards

X. Preparing Cold Foods (Garde Manager)
- A. Salads and dressings
- B. Cold meat/vegetable, relish trays and dips
- C. Fruit/vegetable garnishes and hors d'oeuvres/canapés

XI. Preparing Pies and Pastries
- A. Prepare pies according to assigned method
- B. Prepare assigned pastries

XII. Preparing Cakes and Cookies
- A. Cakes, petit fours and cookies
- B. Decorating

XIII. Preparing Beverages
- A. Coffee, tea, and punches
- B. Hot milk, ice cream and fruit beverages

Diesel Engines I DSL 121

Course Description:
Studies the basic principles involved in the construction and operation of diesel engines. Examines fuel, air, cooling, and control systems of various designs. Emphasizes engine overhaul and repair, including gauging proper measuring instruments and tools for these tasks.

Course Objectives:
The student will explain engine operation, classification, and components; define engine performance factors; describe the operation and components of engine lubrication systems; describe the operation and components of cooling systems; describe the operation and components of induction and exhaust systems; define diesel fuel; explain fuel supply system operation; and explain diesel engine tune-up procedures.

Course Content:
- • Basic Diesel Engine Construction and Operation
- • Engine Classification
- • Performance Factors
- • Lubrication Systems
- • Cooling Systems
- • Induction and Exhaust Systems
- • Diesel Fuels and Fuel Supply Systems

Diesel Engines I DSL 121 cont'd

Course Outline:

Week #1 Chapter 1& 2
This Syllabus
Intro to Diesel Engines and Shop Safety
Week #2 Chapter 3 & 4
Tools, Precision Tools & Fasteners and Principles of Operation
Week #3 Chapter 10 & 11
Lubrication Systems & Cooling Systems
Week #4 Chapter 12
Air Intake Systems
Week #5 Chapter 13
Exhaust Systems
Week #6 Chapter 14 & 15
Diesel Fuels & Basic Fuel Systems
Week #7 Chapter 16 & 17
Fuel Filters and Conditioners & Injection System Fundamentals
Week #8 Chapter 18 & 19
Injection Nozzles & Governors and Acceleration Controls
Week #9 Chapter 20 & 21
Multiple Plunger Inline Injection Pumps & Distributor Injection Pumps
Week #10 Chapter 22
Unit Injector Fuel Injection Systems
Week #11 Chapter 23& 24
Cummins Pressure-Time Injection Systems
Week #12 Chapter 25 & 26
Electronic Engine Controls and Fuel Injection & Diesel Engine Charging Systems
Week #13 Chapter 27
Diesel Starting Systems
Week #14 Chapter 29
Preventive Maintenance and Troubleshooting
Week #15 Chapter 29
Preventive Maintenance and Troubleshooting
Week #16 Chapter 30
Career Opportunities

Early Childhood Education Exploration

A. Providing a Safe, Healthy Learning Environment
B. Promoting Physical, Intellectual, Social, and Emotional Development
C. Promoting Positive and Productive Relationships with Families
D. Making a Program Responsive to Participants' Needs
E. Maintaining a Commitment to Professionalism
F. Seeking Employment in Early Childhood Education and Services
G. Practicing General Employment Skills
H. Balancing Work and Family
I. Examining All Aspects of Industry

Economics and Personal Finance (6120)

I. Implementing Virginia CTE course Requirements

II. Participating in the Student Organizations

III. Developing Economic Skills and Knowledge

IV. Developing Consumer Skills

VI. Planning for transportation, housing, and leisure expenses

VII. Handling banking transactions

VIII. Handling Credit and Loan Functions

IX. Analyzing insurance as risk management

X. Earning and reporting income

XI. Conducting Tax Functions

XII. Examining the Financial implications of an inheritance

XIII. Planning for Personal Financial Success

XIV. Devising an investment and savings plan

XV. Planning financial aspects of a business enterprise

XVI. Managing financial activities for a business enterprise

XVII. Exploring management functions

XVIII. Developing career exploration and employability skills

Education for Employment I

I. Orientation to Education for Employment

II. Study Skills, critical thinking and organizational skill development

III. Grooming/health habits

IV. Communication skills

V. Decision making

Education for Employment I cont'd

VI. Labor laws

VII. Work ethics

VIII. Self-assessment

IX. Career exploration/job seeking skill development

Education for Employment II 9054

Course Description:

Students explore independent living and workplace skills through close examination of individual assets, interests, aptitude, talents, and current occupational abilities.

I. Investigating occupational fields

II. Adapting individual assets to occupations

III. Gauging progress toward independent living

IV. Improving independent living skills

V. Job seeking/interview skills

VI. First days on the job

VII. Safety on the job

VIII. Human relations/attitudes

IX. Basic math skills

X. Money management

XI. Taxes

Education for Employment Coop

I. Orientation
- A. Academic remediation pre-test
- B. Class rules
- C. Requirements for employed students
- D. Definition of EFE

Education for Employment Coop cont'd

II. Self Exploration
- A. Values
- B. Interests
- C. Aptitudes, skills, talents
- D. Assets and barriers
- E. Attitude

III. Career Exploration
- A. Career interest areas
- B. Career interest survey
- C. Career project

IV. Job Seeking Skills
- A. Resume
- B. Sources of job leads and training
- C. Application
- D. Interviewing

V. Life Management
- A. Budgeting
- B. Checking accounts
- C. Credit
- D. Taxes
- E. Consumer skills
- F. Housing issues
- G. Transportation

VI. Communication/Human Relations
- A. Job keeping skills
- B. Communications model
- C. Telephone skills
- D. Human relations terms and case studies

VII. Material Follow-up
- A. Academic remediation pos- test
- B. Job readiness skills post-test

Electronics Technology I

I. Introduction to Electronics Technology
- A. Orientation
- B. Logic pretest
- C. Technology pretest
- D. Math standard to metric conversion

Electronics Technology I cont'd

II. Safety in the Laboratory
- A. Safety procedures
- B. Shock hazards
- C. Short circuits and protection devices

III. Parts and Symbols
- A. Electricity concepts trainer
- B. Symbols and parts identification
- C. Wiring procedures

IV. Basic Electricity
- A. Structure of matter
- B. Conductors and insulators
- C. Electrical Quantities

V. Power Sources
- A. Batteries
- B. Solar cells and thermocouples

VI. Electrical Circuits
- A. Complete circuits
- B. Ohm's law

VII. Series and Parallel Circuits
- A. Series circuits
- B. Parallel and compound circuits
- C. Meter circuits

VIII. Electrical Measurements
- A. Voltage and current measurement
- B. Meter circuits

IX. Resistance and Resistors
- A. Measuring resistance
- B. Resistor color code
- C. Variable resistors

X. Resistive Circuits
- A. Series resistive circuits
- B. Parallel resistive circuits
- C. Equal resistance in parallel
- D. Compound resistive circuits

Electronic Technology II

I. Introduction to Electronics Technology
- A. Overview
- B. Magnetic pretest
- C. Technology pretest
- D. Metric conversion

II. Thevenin's and Norton's Theorems
- A. Thevenin's theorem
- B. Norton's theorem

III. Electrical Power and Energy
- A. Power and Ohm's law
- B. Power dissipation
- C. Kilowatts

IV. Magnetism
- A. Magnetic poles and fields
- B. Temporary and permanent magnets
- C. Magnetic permeability

V. Electromagnetism
- A. Magnetic fields and current
- B. Solenoid
- C. Electromagnetic induction
- D. Electromagnetic induction with current

VI. Applications of Electromagnetism
- A. Electric bell and buzzer
- B. Relay

VII. Alternating Current
- A. Sine wave characteristics
- B. Peak and peak-to-peak voltage
- C. Effective and average voltages

VIII. Inductance
- A. Self induction
- B. Inductance and AC
- C. Inductive circuits

IX. Capacitance
- A. Capacitor charge and discharge
- B. Factors that affect capacitance
- C. Parallel and series capacitors
- D. Capacitor charge

Electronic Technology II cont'd

X. Capacitive Circuits
- A. Capacitance and frequency
- B. Series capacitive circuits
- C. Parallel capacitive circuits

Electronics III

I. Introduction of Electronics III
- A. Overview
- B. General electronic pretest
- C. Technology pretest

II. System Familiarization
- A. Trainer inventory
- B. Circuit modules
- C. Wiring procedures

III. Amplitude Modulation and Demodulation
- A. Percentage of modulation
- B. Diode demodulation

IV. AM Transmitters
- A. Carrier generation
- B. Sideband generation
- C. High and low level modulation
- D. Transmitter measurements

V. AM Receivers
- A. Tuned RF receiver
- B. IF amplifiers
- C. Heterodyning

VI. Single Sideband Transmitters
- A. Carrier suppression
- B. Sideband suppression
- C. Up conversion
- D. Linear Amplifiers

VII. Single Sideband Receivers
- A. Down conversion
- B. IF filters
- C. SSBSC demodulation
- D. Product detectors
- E. Single sideband transmitters

Electronics III cont'd

VIII. Frequency Modulation
- A. FM principles
- B. Modulation
- C. FM standards

IX. FM Transmitters
- A. Crystal oscillators
- B. Frequency Multipliers
- C. Direct and indirect FM

X. FM Receivers
- A. Tuners
- B. IF Stage
- C. Limiters
- D. Frequency division multipliers

Emergency Medical Technician-Basic (111) [Grade 12 only]
Dual Enrollment
Co-requisite: EMS 120
Course Description:
The Emergency Medical Technician course prepares the student for certification as a Virginia and National Registry EMT-Basic. The course includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services Curriculum for Emergency Medicine Technician Basic. The objectives of the course include procedures for recognizing the nature and seriousness of the patient's condition or extent of injuries in order to assess requirements for emergency medical care; the knowledge to be able to administer appropriate emergency medical care based on assessment of the patient's condition; the acquisition of basic knowledge on how to properly and safely lift, move, position, and otherwise handle the patient to minimize discomfort and prevent further injury; obtain the required knowledge to perform, safely and effectively, the expectation of the job description.

A. Preparatory Information
B. Knowledge of Airway Procedures
C. Patient Assessment
D. Medical Emergencies
E. Trauma Emergencies
F. Dealing with Special Populations
G. Ambulance Operation

Emergency Medical Technician-Basic Clinical (120) [Grade 12]
Dual Enrollment
Co-requisite: EMS 111
Course Description:
The student will participate in the observation of Emergency Medical Technician workers in a program within an approved clinical/field setting. The course content includes observation and assisting in: preparatory information, knowledge of airway procedures, patient assessment, medical emergencies, trauma emergencies, dealing with special populations, and ambulance operation.

A. Observing and assisting in procedures for recognizing the nature and seriousness of the patient's condition or extent of injuries in order to assess requirements for emergency medical care.
B. Knowledge to be able to administer appropriate emergency medical care based on assessment of the patient's condition.
C. Acquisition of basic knowledge on how to properly and safely lift, move, position, and otherwise handle the patient to minimize discomfort and prevent further injury
D. Obtain the required knowledge to perform, safely and effectively, the expectation of the job description.

Engineering Drawing/Design

I. Introduction to Engineering Drawing/Design
- A. Definition
- B. History
- C. Safety
- D. Overview, policies, and club
- E. Drafting instruments/tools needed
- F. Student data information sheet

II. Technical Drawing/Design Review
- A. Dimensioning and scales
- B. Multi-view board work and AutoCAD

III. Advanced Pictorial Drawings
- A. Isometrics
- B. Obliques
- C. Perspective

IV. Advanced Descriptive Geometry
- A. Geometric elements and shapes
- B. Auxiliary projection
- C. Revolving for solutions

V. Sectional Views and Conventions
- A. Introduction
- B. Types of section
- C. Standard Symbols and Conventions

Engineering Drawing/Design cont'd

VI. Auxiliary Views and Revolutions
- A. Purpose of auxiliary and revolutions
- B. Orthographic relationships
- C. Reference planes

VII. Intersections and Surface Developments
- A. Parallel line development
- B. Radial line development
- C. Triangulation
- D. Intersection

VIII. Cams and Gears
- A. Types
- B. Layouts
- C. Cams motion
- D. Gear formulas

IX. Architectural Drafting – Introduction
- A. Careers
- B. Architectural styles
- C. Definition of architecture
- D. Basic drawings
- E. Symbols and materials
- F. House plans and specifications

Fashion Marketing Co-op

I. Orientation to Marketing and Fashion
- A. Course overview
- B. DECA

II. Exploring the Nature of Fashion
- A. Concept of fashion and fashion terms
- B. Components of fashion

III. Fashion Trends and Economics
- A. Sources of fashion information
- B. Fashion seasons and cycles

IV. Identifying Fashion Market Centers
- A. Fashion markets
- B. Fashion retailers

V. Fashion Brands and Designers
- A. Classification of fashion brands
- B. Impact of the Designer name

Fashion Marketing Co-op cont'd

VI. Developing Customer Service Skills
- A. Importance of customer service
- B. Handling complaints

VII. Enhancing Communication Skills
- A. Non-verbal and verbal communication
- B. Telephone calls

VIII. Selling Fashion Apparel and Accessories
- A. Types of customers
- B. Steps in a sale

IX. Pricing and Inventory of Apparel and Accessories
- A. Pricing policies and strategies
- B. Types of inventory control

X. Analyzing Fashion Information Media
- A. Print
- B. Electronic

XI. Developing Visual Merchandising and Store Presentation
- A. Use of visual merchandising
- B. Identify types and uses of fixtures

XII. Planning and Buying of Fashion Merchandise
- A. Role of the fashion buyer
- B. Merchandise planning and budgeting terms

Graphics Communication

I. Graphic Communications
- A. History, purpose, and influence
- B. Principles of design
- C. Image generation

II. Lab Management
- A. Measurements
- B. Photography terms and concepts
- C. Lab safety

III. Finance
- A. Economics of a printing business
- B. Printing, binding, and finishing process

IV. Careers

<u>Graphics Communication</u> cont'd

V. Layout and Design
- A. Layouts
- B. Transfer

VI. Enlarging and Cropping Photos
- A. Reproduction
- B. Register marks and mark colors

VII. Process Camera Operations
- A. Components of a process camera
- B. Operations

VIII. Negative Production
- A. Negative types
- B. Development

IX. Stripping Flats
- A. Strip/masking
- B. Opaque photo imperfections

X. 35 mm Photography
- A. Materials
- B. Lifting
- C. Techniques

XI. Silk Screen
- A. Procedures
- B. Production

XII. Plate Making Procedures
- A. Procedures
- B. Prepare for presses

XIV. Offset Printing
- A. Solid/two color process
- B. Troubleshoot press problems

Health Assistant I

I. Health Care Team
- A. Health care industry
- B. Patient Bill of Rights

II. Providing for Basic Health
- A. Personal hygiene needs
- B. Assistance for clients in ambulation

III. Safety Procedures
- A. Hazards
- B. Protective services
- C. Infectious disease control measures
- D. Sanitization/sanitation procedures

IV. Body Structure and Function
- A. Integumentary systems
- B. Circulatory system
- C. Respiratory system
- D. Nervous system
- E. Muscular-skeletal system
- F. Reproductive system
- G. Urinary system
- H. Gastrointestinal system
- I. Endocrine system

V. Applying Nursing Procedures
- A. Patient care procedures
- B. Assisting with sterile techniques
- C. Post-mortem care
- D. Nutritional needs

VI. First Aid Concepts
- A. Bleeding
- B. CPR
- C. Shock
- D. Poisoning
- E. Seizures

VII. Life Span Development
- A. Growth and development
- B. Coping and stress
- C. Communication
- D. Death

Health Assistant II

I. Obtaining Employment
- A. Job opportunities in home health care
- B. Professional grooming
- C. Patient's Bill of Rights
- D. Client confidentiality
- E. Professional ethics

II. Aging client and Interpersonal Relations
- A. Psycho-social problems of elderly
- B. Client/family and staff relations
- C. Myths and stereotypes
- D. Effects of aging

III. Providing Personal Care
- A. Clothing selection for client
- B. Clothing adaptations
- C. Dressing/undressing client
- D. Positioning/repositioning client
- E. Medication and treatment administration
- F. Physical exercise assistance

IV. Providing Basic Health Needs
- A. Time management
- B. Money management
- C. Purchasing within a budget
- D. Health care appointments
- E. Records management

V. Maintaining the Home Environment
- A. Housekeeping schedule
- B. Cleaning supplies
- C. Clothing care
- D. Sanitation methods

VI. Safety in the Home
- A. Heating equipment emergencies
- B. Pest control
- C. First aid
- D. Accidents/injuries policies
- E. Fire safety and emergency procedures

VII. Dying, Death, and Hospice Care
- A. Examine personal feeling about death and dying
- B. Stages of dying
- C. Physical signs of impending death
- D. Hospice care

Health Assistant II cont'd

E. Aide's responsibilities at time of death

Horticulture I

I. Introduction to Greenhouse Operation and Management
- A. Course overview
- B. Equipment operation and safety
- C. EFA organization

II. Greenhouses
- A. Types and construction
- B. Environmental control systems

III. Botany
- A. Plant parts and function
- B. Angiosperms/gymnosperms

IV. Physiology: Plant Growth and Development
- A. Photosynthesis
- B. Respiration
- C. Transpiration and water movement

V. Plant Propagation
- A. Sexual
- B. Asexual
- C. Tissue culture (micro-propagation)

VI. Plant Nutrition
- A. Macronutrients
- B. Compare various types of customer service
- C. Soluble salts/pH

VII. Plant Growth Regulators

VIII. Entomology and Plant Pathology

IX. Greenhouse Crops
- A. Poinsettias
- B. Houseplants

Horticulture II

I. Supervised Occupational Experience
- A. Concept of SOEP
- B. Work-study records
- C. Job availability and securing a job

II. Leadership Training
- A. Identify effective communication skills
- B. Parliamentary procedures
- C. Oral communication skills
- D. FFA

III. Environmental Control Systems and Devices
- A. Establishing environmental control in a greenhouse
- B. Heating and lighting systems
- C. Irrigation equipment
- D. Watering in the greenhouse

IV. Merchandise Display and Maintenance
- A. Inventory control
- B. Plant maintenance
- C. Plant evaluation and conditioning
- D. Displays
- E. Pricing
- F. Plant sale procedures

V. Landscape and Turf Establishment
- A. Exterior landscape design
- B. Interior landscape design
- C. Exterior landscape installation
- D. Interior landscape installation

VI. Turf and Landscape Management
- A. Tree and plant winterizing
- B. New plant protection
- C. Dead tree removal
- D. Interior landscape maintenance
- E. Fertilizing schedules

VII. Equipment Maintenance and Repair
- A. R & R irrigation and spray systems
- B. Basic electrical repairs
- C. Small engines
- D. Hand tool maintenance and repair

Hotel/Motel Marketing

I. Introducing the Hospitality Industry

II. Planning for a Career in Hospitality

III. Communicating on the Job

IV. Marketing Concepts and Functions in the Hospitality Industry

V. Selling Hotel Services

VI. Performing Front Office Functions

VII. Performing Housekeeping Functions

VIII. Performing Food and Beverage Functions

IX. Managing Group Events

X. Performing Security, Safety, and Confidentiality Functions

XXII. Performing Engineering Functions

XXIII. Performing Accounting and Purchasing Functions

XXIV. Examining Guest Relations

XXV. Exploring the Organization of Hotels

XXVI. Participating in the Student Organization

XXVII. Examining All Aspects of Industry

Introduction to Fashion Design and Merchandising (8149)

Course Description:

Students study the basic apparel and accessories industry and skills necessary for successful entry-level employment in the apparel business. Students develop skills while studying the areas of fashion styles of apparel and garment parts, fashion accessories, textiles, fashion brands and their images, appropriate fashion wear, personal selling, evolution of fashion, fashion interest and demand, fashion coordination, and planning a career in fashion.

I. Orientation to fashion merchandising

II. The movement of fashion

III. Application and interview for a fashion career

Introduction to Fashion Design and Merchandising (8149) cont'd

IV. Careers in apparel and accessory industry

V. Styles and accessories

VI. Textiles

VII. Brands and image

VII. Appropriate fashion wear

IX. Selling fashion apparel and accessories

X. Interest and demand

XI. Fashion coordination

XII. Evolution of fashion

XIII. Human relations and communications

Junior Reserve Officers' Training Corps (JROTC)

Army

I. Introduction to Army JROTC

II. Foundations of American citizenship

III. Techniques of communication

IV. Leadership

V. Cadet challenges

VI. Leadership lab

VII. First aid

VIII. Drug abuse prevention

IX. Map reading

X. Military history

XI. Career opportunities

XI. Role of the armed forces

<u>Junior Reserve Officers' Training Corps</u> (JROTC) cont'd

XIII. Technology Awareness

XIV. Command and staff procedures

Marines

I. Leadership tenets

II. Physical fitness and health

III. Drill and ceremonies

IV. Marksmanship

V. Military organization and orientation

Navy

I. Military Drill

II. Uniforms

III. Military Customs and Courtesies

IV. History of JROTC

V. Citizenship

VI. Laws-Authority-Responsibility

VII. War at Sea

VIII. U.S. Navy

IX. Strategy and Tactics

X. Maritime Geography

XI. Oceanography-Meteorology-Astronomy

XII. Aeronautical Science

XIII. Sea Power

XIV. National Security

XV. Laws of the Sea

Junior Reserve Officers' Training Corps (JROTC) cont'd

XVI. Shipboard Life

XVII. Rules of the Road

XVIII. Navigation-Time

XIX. Ethics and Morals

XX. Case Studies

XXI. Positions of Authority

XXII. Responsibility for Others

Keyboarding Applications

I. Exploring Computer Concepts
- A. Identify computer concepts
- B. Boot, access, and exit operating system and software
- C. Input data and commands using peripherals
- D. Key alphabetic, numeric, and symbol information
- E. Manipulate data/software operating system
- F. Use file and disk management techniques

II. Mastering Keyboarding Skills
- A. Improve keyboarding techniques by practicing drills and applications
- B. Increase keyboarding speed by practicing drills and applications
- C. Perform keyboarding drills and applications

III. Producing Documents
- A. Product non-technical documents
- B. Produce technical documents
- C. Compose non-technical documents
- D. Compose technical documents
- E. Keyboard and format addresses
- F. Keyboard and format columns, tables, graphs, and charts
- G. Keyboard and format a letter and memorandum
- H. Synthesize and key data directly from conversations, meetings, and media
- I. Keyboard and format research related documents

IV. Expanding/Producing Advanced Word Documents
- A. Complete special forms
- B. Produce copy using paper of varying dimensions
- C. Merge files to produce form letters
- D. Proofread for accuracy, content, grammar, spelling, and punctuation
- E. Interpret charts, graphs, illustrations, tables, and other visual aids

Keyboarding Applications cont'd

F. Edit technical and non-technical documents
G. Enhance layout of documents

V. Maintaining Equipment
A. Maintain workstation, equipment, materials, and operational supplies
B. Troubleshoot computer problems

VI. Preparing for Employment
A. Participate in course activities sponsored by the student organization
B. Develop a resume
C. Complete a job application form
D. Demonstrate successful interviewing techniques
E. Compose an interview follow-up letter
F. Create a portfolio
G. Apply for a promotion
H. Identify the steps to follow in resigning from a position

Legal System Administration

I. Introduction to Office Administration
A. Determining referral
B. Communicating with officers of the court/legal agencies

II. Managing Records and Files
A. Client records
B. Law library

III. Managing Financial Functions
A. Checkbook accounts
B. Billings
C. Maintaining client accounts

IV. Correspondence
A. Legal terms
B. Legal formats

V. Non-Litigation Documents
A. Agreements, contracts, and leases
B. Bill of Sale/deeds
C. Probate/wills
D. Power of Attorney
E. Bankruptcy

VI. Litigation Documents
A. Marriage/divorce
B. Property and settlements

Legal System Administration cont'd

C. Summonses
D. Subpoenas
E. Motions for Judgment
F. Depositions

VII. Legal and Business Ethics
A. Client information
B. Professional relations
C. Election's transfer of legal documents

Life Planning

I. Developing a life management plan

II. Caring for self and others

III. Interpersonal relationships

IV. Strong, functional families

V. Career planning

VI. Personal and career responsibilities

VII. Developing a plan for using resources

Manufacturing Technology

I. Manufacturing Concepts
A. Production systems
B. Environmental/social impact

II. Impact on Society
A. Safety
B. Establish manufacturing company

III. Technology Impact and Manufacturing
A. Computers
B. Changing requirements

IV. Material Selection
A. Properties and types of materials
B. Usage

Manufacturing Technology cont'd

V. Measurement
- A. Metric system
- B. Standard system

VI. Manufacturing Tools/Equipment
- A. Separating tools/equipment
- B. Forming tools/equipment

VII. Manufacturing Skills
- A. Role of personnel
- B. Product determination

VIII. Planning and Design
- A. Processes
- B. Jig and fixture design

IX. Marketing
- A. Packaging
- B. Pricing
- C. Distribution

Marketing Co-op

I. Orientation, DECA, and Parliamentary Procedure
- A. Course overview
- B. Overview of training station
- C. DECA

II. Employment and Advancement
- A. Employment application, resume, portfolio
- B. Company rules and regulations

III. Human Relations
- A. Relationships with co-workers and supervisors
- B. Customer complaints and difficult customers

IV. Communications
- A. Written – business letters and memos
- B. Oral communication
- C. Company news media and meetings

V. Personal Selling
- A. Steps of a sale
- B. Buying motives
- C. Sales demonstration

Marketing Co-op cont'd

VI. Marketing Math
- A. Cash register procedures
- B. Types of inventory control
- C. Pricing policies and strategies
- D. Types of discounts

VII. Sales Promotion/Advertising
- A. Types of advertising media
- B. Parts of print advertisement

VIII. Sales Promotion/Display
- A. Types of exterior and interior displays
- B. Elements of effective displays

IX. Economics
- A. Economics and its importance
- B. Types of product utility
- C. Four phases of a business cycle
- D. Channels of distribution

X. Marketing

XI. Market Planning/Branding, Packaging, and Labeling

XII. Store Operations

Nutrition and Wellness 8229

Course Description:

Students enrolled in this course focus on making choices that promote wellness and good health. Students develop skills in obtaining, storing, and preparing nutritious meals and snacks.

I. Making healthy food choices

II. Relationship between food choices and health

III. Relationship between psychological/social needs and food choices

IV. Foods that promote wellness

V. Obtaining and storing food

VI. Preparation of and serving nutritious meals

VII. Food preparation equipment

VIII. Analyzing nutritious strategies

Office Administration

I. Introduction to Office Administration
- A. Course overview
- B. FBLA

II. Development of Communication Skills
- A. Place/receive telephone calls
- B. Prepare written telephone messages
- C. Compose business correspondence

III. Maintenance of Office Systems
- A. Maintain personal computer/network system
- B. Maintain copier

IV. Management of Financial Functions
- A. Manage cash fund accounts
- B. Prepare payroll records
- C. Prepare and post check records and deposits
- D. Complete purchase requisitions
- E. Prepare inventory records

V. Management of Information
- A. Maintain alphabetical filing system
- B. Maintain numerical filing system
- C. Maintain chronological filing system

VI. Processing of Information and Data
- A. Key documents
- B. Transcribe dictation from recorded media
- C. Create and format tables
- D. Create basic macros
- E. Search/replace data
- F. Merge text
- G. Sort word processing data
- H. Create a spreadsheet
- I. Create a database

VII. Development of Organization and Planning Techniques
- A. Monitor work loads
- B. Maintain supervisor's appointment calendar and schedules
- C. Give written/oral directions

VIII. Supervision of Employees
- A. Provide feedback to teams and individuals
- B. Participate in employee performance evaluation

Office Administration cont'd

IX. Development of Employability Skills
- A. Complete a job application
- B. Demonstrate successful interviewing techniques
- C. Compose an interview follow-up letter

Office Administration Co-op

I. Introduction to Office Administration
- A. Course overview
- B. FBLA

II. Development of Communication Skills
- A. Place/receive telephone calls
- B. Compose business correspondence
- C. Prepare camera-ready copy

III. Maintenance of Office Systems
- A. Maintain personal computer/network system
- B. Maintain printers and copiers

IV. Management of Financial Functions
- A. Operation of calculators and adding machines using the touch system
- B. Manage cash fund accounts
- C. Prepare payroll records
- D. Prepare and post check records and band deposits
- E. Complete purchase requisitions
- F. Prepare inventory records

V. Management of Information
- A. Maintain alphabetical filing system
- B. Maintain numerical filing system
- C. Maintain chronological filing system

VI. Processing of Information and Data
- A. Key documents
- B. Transcribe dictation from recorded media
- C. Enhance formatting of documents
- D. Create and format tables
- E. Merge text and sort word processing data
- F. Create a spreadsheet and database

VII. Development of Organization and Planning Techniques
- A. Monitor workloads
- B. Maintain supervisor's appointment calendar and schedules
- C. Giving and following written/oral directions

Office Administration Co-op cont'd

VIII. Supervision of Employees
- A. Provide feedback to teams and individuals
- B. Maintain production records
- C. Participate in employee performance evaluation

IX. Development of Employability Skills
- A. Update resumes
- B. Complete a job application
- C. Demonstrate successful interviewing techniques

Principles of Business and Marketing

I. Orientation and DECA
- A. Course overview
- B. DECA

II. Exploring the worlds of business and marketing

III. Understanding the role of economics in a global economy

IV. Developing communication and interpersonal skills

V. Making consumer choices

VI. Developing employability skills

Technical Drawing/Design

I. Introduction to Technical Drawing/Design
- A. History
- B. Safety
- C. Overview, policies, and club

II. Lettering and Freehand Sketching
- A. Letters, numbers, and fractions
- B. Lettering devices and guides
- C. Straight lines, curves, and guides
- D. Plane figures, shapes, and pictorial sketches

III. Use and Care of Drafting Equipment
- A. Basic equipment
- B. Line technique

IV. Use of the Scale
- A. Fractions
- B. Reading the scale

Technical Drawing/Design cont'd

V. Computer-aided Drafting and Manufacturing – CAD and CAM
- A. CAD concepts
- B. CAD system
- C. CAD drawings

VI. Geometry in Technical Drawing
- A. Importance
- B. Basic drafting geometry problems

VII. Multi-view Drawing – Orthographic Projection
- A. Three view rectangular
- B. Selection of views and spacing
- C. Projection of lines, points, and surfaces
- D. Use of hidden lines
- E. Three view-curved surfaces
- F. Two view cylindrical
- G. Line technique

VIII. Basic Pictorial Drawings
- A. Isometrics
- B. Obliques
- C. Perspective

IX. Dimensioning
- A. Basic practices
- B. Theory

X. Drawing Sectional Views and Conventions
- A. Types of sections
- B. Standard symbols and conventions

Principles of Technology I

I. Force
- A. Controlled, measured, and applied
- B. Mechanical, fluid, electrical, and thermal systems

II. Relationship of Work
- A. Effects of work
- B. Mechanical, fluid, electrical, and thermal systems

III. Rate
- A. Units
- B. Mechanical, fluid, electrical, and thermal systems

Principles of Technology I cont'd

IV. Resistance
- A. Mechanical, fluid, electrical, and thermal systems
- B. Good and bad effects in each system

V. Energy
- A. Types
- B. Laws

VI. Power
- A. Application
- B. Mechanical, fluid, electrical, and thermal systems

VII. Transformers
- A. Force transformers
- B. Mechanical, fluid, electrical, and thermal systems

Principles of Technology II

I. Momentum

II. Waves

III. Energy Converters

IV. Radiation

V. Light and Optics

VI. Transducers

VII. Time Constants

Production Systems

I. Technology Applications
- A. Production technology, manufacturing technology, and construction technology
- B. Problem solving

II. System Evaluation
- A. Benefits and drawbacks of system
- B. Design portfolios

III. Resources in Technology
- A. Manufacturing
- B. Processing
- C. Constructing

Production Systems cont'd

IV. Production of a Product
- A. Design
- B. CAD
- C. Engineering

V. Analyze Materials
- A. Text
- B. Select

VI. Construction Project
- A. Plan
- B. Select
- C. Manage

VII. Production Project
- A. Plan/design production systems
- B. Build tools and fixtures
- C. Select production process

VIII. Control System
- A. Mechanical, fluid, electrical, and thermal systems
- B. Computer controls for robotics

IX. Promotion and Monitoring
- A. Marketing considerations
- B. Quality assurance

Technical Drawing (8435)

Course Description:

Students experience the basic language of industry. Students design, sketch, and make technical drawing, models, or prototypes of real design problems. The course is recommended for future engineering and architectural students.

I. Introduction to technical drawing

II. Lettering techniques

III. Design sketches

IV. Design drawings

V. Section drawings

VI. Perspective views

VII. Presentation plans

Technical Drawing (8435) cont'd

VIII. Plot and elevation drawings

IX. Specification plans

Technology Foundations

I. Introduction to Technology Foundations
- A. Definition of technology
- B. Negative and positive impacts of technology
- C. Math, science, and technology
- D. History of technology
- E. The IDEATE problem solving process

II. Information as a Technology Resource
- A. Forms of information
- B. Information centers
- C. Computers, graphics, and databases

III. Using Materials as a Technological Resource
- A. Identifying materials by family groups
- B. Materials and their global sources
- C. Science and materials
- D. Materials and their application
- E. Recycling materials

IV. Using Energy as a Technological Resource
- A. Energy and technological systems
- B. Major types of energy
- C. Energy and motion
- D. Conservation of energy

V. Analyzing Consumer Products
- A. Product improvement
- B. Service and maintenance of selected products
- C. Math, science, and consumer products
- D. Products, repairs, and service manuals

VI. Controlling a System with Computers
- A. Controlling systems and their impacts
- B. Use of computers and technological data
- C. Technological systems and users
- D. Control systems demonstration

Technology Foundations cont'd

VII. Designing a New Product
- A. Math and science improvements
- B. Ideas, graphics, and alternative solutions
- C. Construction of prototypes
- D. Presenting technological solutions

Technology Transfer

I. Technological Systems
- A. Impact
- B. Advances

II. Combining Resources to Produce Technological Systems
- A. Safety regulations
- B. Elements of technology

III. Problem Solving
- A. Draw systems model
- B. Feedback and control
- C. Modeling/CAD

IV. Computing Systems
- A. Electricity/electronics
- B. Computer system components

V. Communication
- A. Elements
- B. Produce and transmit

VI. Production of Technological Systems
- A. Design, plan, and simulate using CAD, CAM, and CNC equipment
- B. Quality control

VII. Construction with Technological Systems
- A. Foundation
- B. Models

VIII. Transportation Using Technology Systems
- A. Modes of transportation
- B. Design and build transportation systems

IX. Biotechnology Systems
- A. Impacts and ethical issues
- B. Biology related technologies in agriculture and food production

Technology Transfer cont'd

X. Controlling Systems
- A. Open and closed loop systems
- B. Sensors

XI. Impacts of Technology
- A. Group study
- B. Research/construct model/display

Welding (8672) [Grade 12]

Dual Enrollment (Production II Dual Enrollment is offered only in the Spring Term.)

Course Description:

Welding introduces the student to the history of oxyacetylene welding; the principles of welding and cutting, nomenclature of the equipment; development of the puddle, running flat beads, butt welding in the flat, vertical and overhead positions in accordance with government standards; brazing, silver, and soft soldering, and heat treating of small tools; safety procedures in the use of tools and equipment.

- A. Identify all parts associated with oxyacetylene welding and cutting equipment.
- B. Be able to assemble, use and disassemble all equipment and check for leaks.
- C. Braze and fusion weld sheet steel in all positions.
- D. Flame cut steel by manual and motor driven carriage method.

Word Processing

I. Introduction to Word Processing
- A. Course overview
- B. FBLA

II. Word Perfect Basics
- A. Introduction to Word Perfect
- B. Correcting text
- C. Saving, opening, and retrieving documents
- D. Printing and file management
- E. Text enhancement
- F. Text entry features
- G. Editing features

III. Word Perfect Formatting and Editing
- A. Writing tools
- B. The button bar
- C. Line spacing, margins, and tabs
- D. Document formatting
- E. View document options
- F. Footnotes and endnotes
- G. Tables and text columns
- H. Outlining

Word Processing cont'd

IV. Word Perfect Power Tools
- A. Advanced file manager
- B. Macro
- C. Merge and sort
- D. Spreadsheets

V. Desktop Publishing Features
- A. Graphic images
- B. Graphic lines and borders

VI. Electronic Communications
- A. LAN components
- B. Electronic mail

VII. Employment Preparation
- A. Letter of application
- B. Resume
- C. Job application
- D. Interview techniques

Word Processing Co-op

I. Introduction to Word Processing
- A. Course overview
- B. FBLA

II. Word Perfect Basics
- A. Introduction to Word Perfect
- B. Correcting text
- C. Saving, opening, and retrieving documents
- D. Printing and file management
- E. Editing features

III. Word Perfect Formatting and Editing
- A. Writing tools
- B. The button bar
- C. Line spacing, margins, and tabs
- D. Document formatting
- E. Footnotes and endnotes
- F. Tables
- G. Text columns
- H. Outlining

Word Processing Co-op

IV. Word Perfect Power Tools
- A. Advanced file management
- B. Macro
- C. Merge and sort
- D. Spreadsheets

V. Desktop Publishing Features
- A. Graphic images
- B. Graphics lines and borders
- C. Complex tables

VI. Electronic Communication
- A. LAN
- B. Electronic mail
- C. Fax modem

VII. Employment Preparation
- A. Career options
- B. Letter of application
- C. Resume
- D. Job application
- E. Interview techniques

Marine Electric

I. Participating in the Student Organization

II. Focusing on the Electrician's Profession

III. Using Tools and Materials

IV. Applying Basic Electrical Theory

V. Navigating the National Electrical Code (NEC) Book

VI. Selecting and Installing Conductors

VII. Identifying and Installing Panel boards and

VIII. Describing Generators and Power Supplies

ENGLISH

Grade 7

English 7 (Topics may be interchanged to meet the needs of the students.)

I. First Nine Weeks

A. Writing/ Grammar/ Study Skills (See Assessment Blueprint for specifics)
1. Dictionary skills
2. Textbook skills
3. Study skills
4. Test-Taking skills

B. Writing / Grammar
1. The Writing Process
2. Paragraph Development
   a. Expository and persuasive
   b. Central idea and details
   c. Voice and tone
3. Mechanics- Basic Capitalization and Punctuation Rules
4. Review of nouns, pronouns, and verbs
5. Writing Portfolio

C. Selected Vocabulary
1. Review homonyms
2. Break multi-syllabic words into meaningful prefixes, suffixes, and roots
3. Identify connotations
4. Learn the meanings of unfamiliar words
5. Recognize analogies, idioms, similes and metaphors

D. Literature – Prentice- Hall
1. Short story and Novel Elements
   a. Character
   b. Plot
   c. Conflict
   d. Climax
   e. Resolution
   f. Point of View
   g. Theme
2. Folk Literature
3. Reading Comprehension and Strategies

E. Special Projects
1. Oral
2. Written

English 7 cont'd

II. Second Nine Weeks

A. Literary Skills
B. Writing Essays
  1. Narrative
  2. Expository
C. Writing/ Grammar
  1. Usage
    a. Verbs
    b. Adjectives and Adverbs
  2. Subject – Verb Agreement
  3. Agreement of Pronoun and Antecedent
D. Letter Writing
E. Literature Narrative Nonfiction

III. Third Nine Weeks

A. Writing
  1. Compositions
    a. Expository
    b. Persuasive
  2. Research paper
    a. Reference Material
    b. Use of word processor to draft, revise, edit and publish
B. Literature – Drama Elements
C. Informational Text
  1. Fact/ opinion in newspapers, magazines, and other print media
    a. Author's viewpoint
    b. Summary of text
D. Special Projects
  1. Oral
  2. Written

IV. Fourth Nine Weeks

A. Writing Compositions
  1. Expository
  2. Persuasive
B. Grammar
  1. Sentence Structure- Simple, compound, phrases, clauses
  2. Consistency of Verb Tense
  3. Diagramming
  4. Punctuation
C. Literature--Prentice Hall
  1. Elements of Poetry
    a. Figures of speech
    b. Sentence structure, line length, punctuation – how they convey mood and meaning
    c. Rhythm and how it contributes to poem's purpose and theme
    d. Comparison and contrast of rhythm in poems

English 7 cont'd

e. Rhyme, meter, repetition, alliteration, assonance, consonance, and onomatopoeia

Summer Supplementary Reading List

The Adventures of Tom Sawyer, Mark Twain
Anastasia Again!, Lois Lowry
Belle Prater's Boy, Ruth White
Breaking Free, Louann Gaedlent
Call of the Wild, Jack London
The Cay, Theodore Taylor
Cousins, Virginia Hamilton
The Double Life of Pocahontas, Jean Fritz
Dr. Jekyll and Mr. Hyde, Robert L. Stevenson
Gifted Hands, Ben Carson
Hatchet, Gary Paulsen
Island of the Blue Dolphins, Scott O'Dell
Johnny Tremaine, Esther Forbes
The Merchant of Venice, Shakespeare
The Princess Diaries, Meg Cabot
Roll of Thunder Hear My Cry, Mildred Taylor
Sojourner Truth, Krass
Sounder, William Armstrong
Stonewall, Jean Fritz
There's a Girl in My Hammerlock, Jerry Spinelli
Through My Eyes, Ruby Bridges
Treasure Island, Robert L. Stevenson
The View from Saturday, E.L. Konigsburg
Voyage on the Great Titanic, Ellen White
White Fang, Jack London
Within Reach: My Everest Story, Jack Galvin

*Students enrolled in Honors English are to read two of the five selections indicated by the asterisks. Students in regular English classes in grades seven and eight are to make one selection from the recommended list.

Grade 8

English 8 (Topics may be interchanged to meet the needs of the students.)

I. First Nine Weeks

A. Literature
1. Elements of short story
2. Recommended short stories to teach
   a. "The Finish of Patsy Barnes"
   b. "The Tell-Tale Heart"
   c. "Thank-You Ma'am"
   d. "Up the Slide"

English 8 cont'd

e. "Raymond's Run"
f. "The Drummer Boy of Shiloh"
g. "A Ribbon for Baldy
h. "Charles"

3. Authors to emphasize include Bradbury, London and Poe
4. Book report (Fiction)

B. Grammar and Composition

1. Review of basic capitalization and punctuation rules
2. Review of nouns, pronouns, adjectives, and prepositional phrases
3. Review of double negatives and expletives
4. Review of the steps in the writing process
5. Creative writing activities at the end of literary selections
6. Writing portfolio

C. Vocabulary

1. Review homonyms (most often confused)
2. Root words and lists of suffixes and prefixes
3. Apply knowledge of word origins, derivations, and idioms
4. Use analogies, metaphors, and similes to extend vocabulary development

D. Study Skills

1. Speech and listening: Student conducted interviews
2. Organization: organizing, maintaining, and using a notebook

E. Oral Projects

1. Memorization and recitation of selected readings
2. Skits and talk shows

II. Second Nine Weeks

A. Literature

1. Biography/ Autobiography
   a. "Baseball"
   b. "The Old Man Mad About Drowning"
   c. "I Know Why the Caged Bird Sings"
2. Essays
   a. "Forest Fire"
   b. "The American Dream"
3. Reading Comprehension Strategies
4. Book report (Science fiction)

B. Grammar and Composition

1. Verbs (principal parts, conjugation), adverbs, conjunctions, and interjections, compliments – phrases and clauses
2. Kinds of sentences: compound, complex, and compound-complex
3. Paragraph writing including narrative, informational, expository, and persuasive
4. Writing Portfolio

C. Vocabulary

1. Use selected vocabulary from reading assignments
2. Apply knowledge of roots, analogies and affixes (prefixes and suffixes) regularly

English 8 cont'd

D. Test-taking skills
E. Oral projects including oratory contests

III. Third Nine Weeks

A. Literature
1. Nonfiction selections – Essays, speeches
2. Mass Media
3. Book report (Nonfiction)
4. Informational Text
a. Analyze author's use of text structure and word choice
b. Analyze details for relevance and accuracy
c. Read and follow instructions to complete an assigned task
d. Summarize and critique text
e. Evaluate and synthesize information to apply in written and oral presentations
f. Draw conclusions based on explicit and implied information
g. Make inferences based on explicit and implied information

B. Grammar and Composition
1. Review of basic grammar, mechanics, and usage
a. Comparative and superlative adjectives and adverbs
b. Agreement of pronouns and antecedent
c. Compound and complex sentences
d. Verb tense consistency
e. Punctuation and capitalization
2. Mini-research paper (MLA style) including note taking, paraphrasing, outlining, and documenting (bibliography)

C. Vocabulary
1. Literary terms
a. Identify simile, metaphor, personification, hyperbole, and analogy
b. Use context, structure, and connotations to determine meaning of words and phrases
2. Use selected vocabulary from nonfiction reading assignments

D. Test-taking Skills and Strategies
1. Timed objective test items
2. Practice tests on bubble sheets
3. Computer assisted practice tests

E. Oral projects
1. Author and/or character role-plays
2. Presentations based on information found during research
3. Presentations based on interviewing techniques

English 8 cont'd

IV. Fourth Nine Weeks

A. Literature
1. Drama – *The Diary of Anne Frank*
2. Poetry
3. Book report (Biography)
4. Informational Text
a. Analyze the author's use of text structure and word choice
b. Draw on background knowledge and knowledge of text structure
c. Analyze the author's credentials, viewpoint, and impact
d. Read and follow instructions
e. Summarize and critique text

B. Grammar and Composition
1. Style
2. Letters and forms

C. Vocabulary
1. Use selected vocabulary from reading assignments
2. Apply knowledge of roots analogies, and affixes (prefixes and suffixes)

D. Oral projects
1. Persuasive speech from findings during research
2. Class production of selected scene(s) from drama

Summer Supplementary Reading List

Across Five Aprils, Irene Hunt
****The Adventures of Sherlock Holmes,*** Sir Arthur Conan Doyle
Alice in Wonderland, Lewis Carroll
****Born Free,*** Joy Adamson
Dale Earnhardt: The Intimidator, Kathy Persinger
The Day Lincoln Was Shot, Jim Bishop
Diana, Princess of Wales, Kristine Brennan
Death Be Not Proud, John Gunther
The Face on the Milk Carton, Caroline Cooney
Fahrenheit 451, Ray Bradbury
Girl in Blue, Ann Rinaldi
The Giver, Lois Lowry
Goodbye Vietnam, Gloria Whelan
Great Moments at the Olympics, Mattern, Joanne and James
A Group of One, Rachna Gilmore
Holes, Louise Sachar
Jumping Off to Freedom, Anilu Bernardo
The King Must Die, Mary Renault
The Land, Mildred Taylor
The Light in the Forest, Conrad Richter
****Little Women,*** Louisa May Alcott
Lorna Doone, Blackmore
Michaelangelo, Diane Stanley
****The Miracle Worker,*** William Gibson

Summer Supplementary Reading List cont'd

***My Left Foot,** Christy Brown
My Life, Earvin "Magic" Johnson
My Life in Dog Years, Gary Paulsen
My Side of the Mountain, Jean George
***The Prince and the Pauper,** Mark Twain
The Scarlet Pimpernel, Baroness Orczy
***The Serpent Never Sleeps,** Scott O'Dell
***Shane,** Jack Schaefer
The Silent Storm, Sherry Garland
***The Skin I'm In,** Sharon Flake
***Slam!,** Walter Dean Myers
Summer of My German Soldier*, Bette Greene
Will Smith: Actor, Stacey Stauffer
Stargirl, Jerry Spinelli
***The Story of My Life,** Helen Keller
***Summer of My German Soldier,** Bette Greene
***Think Big,** Ben Carson
A Tree Grows in Brooklyn, Betty Smith
***The Wave,** Todd Strasser
***Whirligig,** Paul Fleischman
***Why Do They Hate Me,** Laurel Holliday

*****Students enrolled in **Honors English** are to read two books from the recommended list. One of the selections must come from those indicated by the asterisks. Students in **regular English** classes in grade seven and eight are to make one selection from the recommended list.

Grade 9

English 9 (The topics, listed at each grade level, may be interchanged to meet the needs of the students.)

I. First Nine Weeks

A. Orientation – levels of language
B. Short story – specific selections from Literature text; key elements of short stories
C. The Writing Process-- Prewriting, Organization, Audience, Purpose, Narrative Techniques, Precise Language, Formal vs. Informal, paragraph development
D. The Writing Process-- Introductions and Conclusions, Thesis Statement, Logical Progression, Persuasion, Counterargument
E. Mechanics
F. The Writing Process-- Introductions and Conclusions, Thesis Statement, Logical Progression, Persuasion, Counterargument
G. Novel Study-- Identify characteristics that distinguish literary forms, Understand author influence, Analyze techniques used to convey information, Analyze the cultural or social function of the text
F. Poetry-- Compare and contrast the use of literary devices to convey a message and elicit emotion, Identify tone and mood, Compare and contrast types of figurative language, Identify sound devices
G. Informational Materials-- Analyze information from various print and electronic sources,

English 9 cont'd

Identify basic principles of media literacy, Identify key questions of media literacy

II. Second Nine Weeks

A. Research paper – Use technology to access and organize information, focus a topic, select reliable and relevant resources, Differentiate between fact and opinion, Question validity and accuracy of sources
B. Nonfiction: Understand specialized vocabulary, Identify and infer main idea, Explain author's purpose, Summarize essential details, Identify a position/argument, Examine text
C. Drama--*Romeo and Juliet*: identify and analyze elements of dramatic literature, understand how stage directions help the reader understand a play, compare and contrast scenes
D. Epic: *The Odyssey*: Plot, Character, Epic, Poetry, Prose, Conflict, Allusion, Tragic Flaw, Tragedy, Myth, Hubris, Alliteration, Consonance, Assonance, Allusion, Imagery, Metaphor, Simile, Onomatopoeia, Personification, Epic Hero
E. Modern drama selection
F. Essay writing/Planned oral presentations/Daily Language Practice

Summer Supplementary Reading List

Alice in Wonderland, Lewis Carroll
The Good Earth, Pearl Buck
The Old Man and the Sea, Ernest Hemingway
Watership Down, Richard Adams
West Side Story, Irving Shulman
The Little Prince, Antoine de St. Exupery
Dandelion Wine, Ray Bradbury
And Then There Were None, Agatha Christie
Mythology, Edith Hamilton
Profiles in Courage, John F. Kennedy
Antigone; The Pearl, 10th Grade Textbook

Grade 10

English 10

I. First Nine Weeks

A. Short stories – Identify main and supporting ideas. Make predictions, draw inferences, and connect prior knowledge
B. Poetry--Compare and contrast literary devices in order to convey a poem's message and elicit a reader's emotions. Interpret and paraphrase the meanings of selected poems
C. Informational Materials/ Media—Locate specific information in manuals or other informational sources by using strategies such as skimming, summarizing, and highlighting. Identify the different formats and purposes of informational and technical texts
D. Workplace Writing-- Evaluate ads, editorials, blogs, websites, and other media; Identify types of writing used in the workplace
E. Persuasive Writing-- Introductions and Conclusions, Thesis Statement, Logical Progression, Persuasion, Counterargument

English 10 cont'd

F. Novel--Identify universal themes; Describe common archetypes that pervade literature.

II. Second Nine Weeks

A. Nonfiction works – Reading and analyzing essays and articles. Analyze how authors use rhetoric to advance their point of view
B. Research-- The student will collect, evaluate, organize, and present information to create a research product
C. Drama-- Analyze the different functions that characters play in a literary text (e.g., antagonist, protagonist, foil tragic hero). Identify and describe dramatic conventions
D. Final Project-- Creation of a collaborative project using available technology
E. Project Presentation--Students orally present project
F. Essay writing Daily/weekly vocabulary practice/Daily Language Practice

Summer Supplementary Reading List

A Midsummer Night's Dream, William Shakespeare
Twelve Angry Men, Reginald Rose
A Farewell to Arms, Ernest Hemingway
Rebecca, Daphne DuMaurier
Of Mice and Men, John Steinbeck
A Separate Peace, John Knowles
The Picture of Dorian Gray, Oscar Wilde
One Day in the Life of Ivan Denisovich, Aleksandr Solzhenitsyn
1984, George Orwell
The Crystal Cave, Mary Stewart
Cyrano De Bergerac, Edmond Rostand

Grade 11

English 11

I. First Nine Weeks

A. Writing: Planning and Organizing—Domains, Writing Models, Writing Process, Test Components
B. Writing: Composing/Written Expression—Elaboration, Tone, Voice, Sentence Variety, Clarity, Persuasion
C. Mechanics-- Capitalization, Spelling, Punctuation. Text Formatting, Parallelism, Phrases, Clauses, Run-ons, Fragments. Sentence Formation
D. Grammar/Usage-- Parts of the Sentence, Pronoun Case and Agreement, Subject-Verb Agreement, Verb Tense and Voice
E. Common Errors/Practical Writing—Double Negatives, Degree of Comparison, Homophones, Confused Words, Organizing, Presenting, Revising, and Editing
F. American Literature—Colonialism/Puritanism: *The Crucible*; identify and describe dramatic conventions; compare and evaluate adaptations and interpretations of a script for stage, film, television or other media. Discuss how the subject matter, style, literary type, theme, and purpose of literary works often reflect the culture and events of the times in which the works were written; describe how the use of context and language structures

conveys an author's intent and viewpoint

G. Revolutionary Period/Rationalism: Demonstrate how two or more texts from the same period treat similar themes or topics; determine an author's point of view or purpose in a rhetorically rich text, analyzing how ambiguity, contradiction, paradox, irony, hyperbole, overstatement, and understatement contribute to text

II. Second Nine Weeks

A. Literature – Romantic Age: Use poetic elements to explain, analyze, and evaluate poetry; analyze the impact of the author's choices in developing the elements of a story or drama (e.g., setting, plot structure, and character development)

B. New England Renaissance/Transcendentalism: Use poetic elements to explain, analyze, and evaluate poetry; analyze information from a text to make inferences and draw conclusions

C. Civil War/Realism/Naturalism/Regionalism: Analyze the impact of the author's choices in developing the elements of a story or drama (e.g., setting, plot structure, and character development); analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

D. Symbolism/ Modernism/Harlem Renaissance: Use poetic elements to explain, analyze, and evaluate poetry; analyze information from a text to make inferences and draw conclusions

E. Postmodernism/Contemporary: Analyze a case in which a point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, irony, sarcasm, understatement). Analyze information from a text to make inferences and draw conclusions

F. Novel: Before, during, and after reading texts, generate and respond to a variety of critical thinking questions to activate prior knowledge, engage actively with learning new information, and reflect on new learning or fresh insights. Analyze information from a text to make inferences and draw conclusions

H. Essay writing Daily/weekly vocabulary practice/Daily Language Practice

Summer Supplementary Reading List

The Scarlet Letter, Nathaniel Hawthorne
A Farewell to Arms, Ernest Hemingway
A Raisin in the Sun, Lorraine Hansberry
The Grapes of Wrath, John Steinbeck
Red Badge of Courage, Stephen Crane
The Great Gatsby, F. Scott Fitzgerald
The Crucible, Arthur Miller
Native Son, Richard Wright
A Member of the Wedding, Carson McCullers
Death of a Salesman, Arthur Miller
Light in August, William Faulkner
A Connecticut Yankee in King Arthur's Court, MarkTwain
To Kill a Mockingbird, Harper Lee

Twelfth Grade

English 12

I. First Nine Weeks

A. Literature

1. Anglo-Saxon period-- Introductions, *Beowulf*, "The Seafarer"; Compare and contrast the development of British literature in a historical context
2. Medieval period-- *The Canterbury Tales, Sir Gawain, Morte d'Arthur, Direct* characterization, prologue, exemplum, parable, allusion, archetype, indirect characterization, social commentary, anecdote, morality play, metaphor, narrative elements
3. Renaissance—Seventeenth Century: Elizabethan theatre, Hamlet /Macbeth. Renaissance poetry, Influence of the Monarchy; Pastoral poetry, Spenserian sonnet, stanza, simile, metaphor, alliteration, Petrarchan sonnet, Shakespearean sonnet, Spenserian sonnet, rhyme scheme, allusion, quatrain, couplet octave, sestet, syntax, tragedy, tragic flaw, tragic hero, soliloquy, aside, prose, monologue, iambic pentameter

B. Research-- Identify and narrow a topic, conduct research, evaluate collected information; and organize information, develop writing, cite sources, understand and avoid plagiarism

1. Business Correspondence
2. Media Influences: Evaluate ads, editorials, blogs, websites, and other media; determine author's purpose and effect on audience

II. Second Nine Weeks

A. Literature

1. 17thCentury-- Metaphysical poetry, paradox, imagery, epigram, carpe diem, epic, extended metaphor, invocation, sestet, conceits, tone, in media res, octave, Italian sonnet, extended simile
2. 18th Century: Pepys' Diary, Johnson's Dictionary, Jonathan Swift, Scientific Reports, Essays
3. Romantic Age: Grey, Burns, Blake, Wordsworth, Coleridge, Byron, Shelley, Keats
4. Victorian Age to Modern Age--1833 – Present (Tennyson, Browning, Bronte, Churchill, Lawrence)

B. Final Project-- Build the ePortfolio

C. Oral presentation-- ePortfolio Project formal presentations

D. Essay writing Daily/weekly vocabulary practice/Daily Language Practice

Summer Supplementary Reading List

Becket, Jean Anouilh
Emma, Jane Austin
Pride and Prejudice, Jane Austin
The Day Lincoln was Shot, Jim Bishop
Wuthering Heights, Emily Bronte
The Count of Monte Cristo, Alexander Dumas
Murder in the Cathedral, T. S. Eliot
Dr. Zhivago, Boris Pasternak
The Secret Life of Sarah Revere, Ann Rinaldi
Saint Joan, George Bernard Shaw

Summer Supplementary Reading List cont'd
Gideon's Trumpet, Anthony Lewis
Sorrow's Kitchen, Mary E. Lyons

Advanced Placement English 12 (Subject to Instructor's College Board Approved Syllabus)

I. The Elements of Fiction
- A. Plot
- B. Character
- C. Theme
- D. Point of View
- E. Symbol and Irony
- F. Emotion and Humor
- G. Fantasy

II. The Elements of Poetry
- A. Figurative Language
- B. Meaning and Idea
- C. Tone
- D. Musical Devices
- E. Rhythm and Meter
- F. Sound and Meaning
- G. Pattern
- H. Bad Poetry and Good
- I. Good Poetry and Great

III. The Elements of Drama
- A. Realistic and Nonrealistic Drama
- B. Tragedy and Comedy

IV. Writing Themes
- A. The Process of Writing
- B. Writing about the Elements of Literature
- C. Writing the Research Theme
- D. Taking Examinations on Literature

Creative Writing

I. Studying, analyzing, and writing poetry

II. Studying, analyzing, and writing various types of stories
- A. Writing how-to pieces
- B. Advertisements
- C. Autobiographies
- D. Opinions
- E. Arguments
- F. Informal essays

Dramatics I

I. Reading, analyzing, and responding to dramatic literature

II. Viewing, analyzing, and responding to live theater

III. Exploring and developing technical theater skills

IV. Developing and demonstrating acting skills

V. Participating in theater games and improvisations

Dramatics, Advanced

I. Select, read and analyze scenes from well-known plays

II. Apply directives for production of a scene or play to performance

III. Assist first year drama students with production projects

IV. Attend and critique local theatrical performances

V. Explore and continue to develop advanced technical theater skills

Journalism I

I. Read and discuss the history of journalism and influential journalists

II. Read and analyze news articles, features, editorial, and political cartoons

III. Write, edit, and revise various types of stories using journalistic techniques

IV. Study all aspects of newspaper production to apply as appropriate in the production of the school newspaper, newsletter, and/or literary magazine

Journalism II

I. Continue the writing, revising, and editing of a variety of types of stories for publication

II. Work with technology and apply techniques as a means of developing media products

III. Write reviews of various forms of fine arts

IV. React in writing to social issues and environmental factors

Journalism III

I. Continue to write, revise, and edit a variety of stories for publication

II. Expand knowledge of desktop publishing and apply techniques as a means of developing media products

III. Develop skills in writing and production of various forms of media such as television, radio, and magazines

IV. Research and write in-depth and investigative reports for various forms of media such as television, radio, and magazines

V. Read and analyze great works in journalism and model various journalistic writing styles

VI. Explore various careers in journalism and other media related fields

Mass Media

I. Analyze the influence of mass media on the society

II. Apply basic skills of journalism in writing and in analysis of mass media

III. Develop skill in communicating verbally and in writing

IV. Develop skill as a consumer and a producer

V. Study the history and development of all aspects of mass media

VI. Study career opportunities in mass media

VII. Vocabulary

SAT Preparation

I. General strategies and format of the SAT

II. Verbal basic

III. Antonyms

IV. Sentence Completion

V. Reading Comprehension

VI. Standard written grammar and usage

VII. Vocabulary

Speech

I. First Nine Weeks

A. Interview techniques
B. Communications models
C. Small group interactions
D. Purposes of speeches
E. Vocal messages
F. Conversation and telephone techniques
G. Directions, introductions, interviews
H. Panel discussions
I. Oral presentations
J. Choosing topics
K. Researching and organizing

II. Second Nine Weeks

A. Delivery and evaluation
B. Informative speeches
C. Persuasive speeches
D. Oral interpretations
E. Group interpretations
F. Informal theater
G. Producing plays
H. Mass media
I. Debates
J. Parliamentary procedure

Study Skills

I. Plan for success

II. Create vocational folders

III. Chart long term goals and objectives

IV. Write personal philosophy of life

V. Study and react to contributions of community leaders

VI. Develop study/work plan

VII. Develop a personal planner

VIII. Complete study skills inventory

IX. Identify ways to combat procrastination

X. Review writing process

XI. Review note-taking skills

Study Skills cont'd

XII. Study a variety of reading skills

XIII. Continue with vocabulary development

XV. Maintain writing folders

FOREIGN LANGUAGE

French and Spanish Exploratory

First Nine Weeks

A. Greet and say, "Goodbye," to teachers and classmates
B. Identify and describe people, things, and classes
C. Identify and discuss cultural characteristics of Spanish speakers in the United States
D. Greet and communicate with others in formal and informal situations
E. Describe family members, pets, and housing (home, apartment, furnishings, etc.)
F. Give an oral report describing self and others
G. Write about school activities, clothing, and school supplies
H. Make a daily schedule of events at various times of day
I. Make a monthly calendar highlighting weather patterns for each season
J. Communicate the dates of various holidays.
K. Write a class schedule with descriptions of classmates and teachers
L. List foods and plan daily menus
M. Write a restaurant review
N. Create a family tree listing immediate and extended relatives
O. Discuss various sports and orally report on favorite teams
P. Describe common classroom items and foods using colors

Second Nine Weeks

Q. Communicate destinations and future plans
R. Express feelings and locations
S. Report on activities of self and others, orally and in writing
T. Communicate plans of the immediate future and discuss completed actions
U. Discuss daily, weekly, and monthly obligations and chores
V. Compare and contrast obligations/chores with classmates
W. Express preferences orally and in writing
X. Discuss personal reactions to news, movies, activities, and events
Y. Analyze written and auditory materials to assess conditions, emotions, and location
Z. Describe personality of self and others
AA. Create a personal student profile advertising physical and personality characteristics
BB. Explain to or for whom something is being done
CC. Elaborate upon likes, dislikes, and interests

French and Spanish Exploratory cont'd

First and Second Nine Weeks

A. Analyze and respond to cultural readings
B. Investigate Notable Hispanics and French Biographies
C. Identify geography of Spanish and French-Speaking countries o Boundaries, countries and capitols, climate, and seasonal weather of Spanish and French-Speaking countries
D. Compare and contrast linguistic and cultural differences of Spanish and French-Speaking countries with the United States
E. Discuss and recognize Spanish and French names, music, and dance
F. Compare and contrast cultural differences and similarities between the United States, and Spanish and French-Speaking countries to meals and mealtimes, pastimes, customs, clothing, vacation activities, teenage life, etc.
G. Identify and practice Spanish/French pronunciation, tone, and accent.
H. Recognize and discuss cognates and false cognates
I. Explore Spanish and French refrains and idiomatic expressions
J. Compare and contrast team sports in the United States with Spanish and French-Speaking countries

French and Spanish I

First Nine Weeks

A. Formal and informal greetings
    1. Polite expressions of courtesy
    2. Familiar greetings and leave-takings
B. Recite alphabet
    1. Pronounce vowels
    2. Pronounce words using appropriate tone and accents
C. Express emotions
D. Identify and use interrogatives, calendar days, months, and numbers 0-100
    1. Ask and tell time
    2. Ask for and give dates
E. Identify and discuss cognates and false cognates
F. Identify seasons
G. Describe weather
H. Identify nouns, articles, adjectives, gender, subject pronouns
    1. Grammatical Agreement
    2. Discuss classes and school life
    3. Describe self, others, and things
    4. Compare and contrast English/Spanish/French subject pronouns
I. Recognize and use colors to describe things
J. Use possessive adjectives and express location
    1. Express ownership of family members and pets
    2. Describe housing arrangements
    3. Describe location of classroom and personal items

French and Spanish I cont'd

K. Conjugate present tense Spanish –ar verbs and French –er verbs; use appropriate contractions
   1. Report on activities of self and others, orally and in writing
   2. Say where people are going
   3. Discuss destinations using contractions
   4. Express feelings and locations

Second Nine Weeks

A. Elicit responses from others using voice intonation and interrogatives
B. Conjugate present tense –er and –ir verbs, and Infinitive Expressions
   1. Talk about meals and discuss what and where people eat and drink
   2. Report on activities of self and others, orally and in writing
   3. Communicate plans of the immediate future and discuss completed actions
   4. Discuss obligations
C. Discuss sports and activities
D. Express preferences and activities using stem-changing and irregular verbs
E. Discuss likes and dislikes using appropriate verbs and indirect object pronouns
F. Recognize and practice correct usage of irregular verb forms
   1. Discuss conditions, emotions, and location
   2. Describe personality of self and others
G. Indirect Object Pronouns: Explain to or for whom something is being done

French and Spanish II

First Nine Weeks

A. Introduce others and respond to an introduction
B. Take accurate dictation
C. Write short biographical statements
D. Detect main ideas in short readings
E. Understand short utterances
F. Engage in a telephone conversation
G. Produce learned vocabulary and phrases in writing and orally
H. Describe professions and characteristics of those professions
I. Write about and discuss weekend plans
J. Make a comprehensive list of daily routines
K. Engage in creative writing
L. Ask questions to obtain information about people, places, and things
M. Discuss clothing and preferences
N. Categorize objects and indicate personal likes and dislikes
O. Create short, illustrated dialogs

Second Nine Weeks

A. Write letters describing past activities
B. Discuss details of airplane travel
C. Create a travel brochure
D. Read and respond to travel plans

French and Spanish II cont'd

E. Communicate what others are doing
F. Discuss healthy and unhealthy foods and eating habits
G Gather and analyze information from video and audio clips
H. Infer meaning from short oral and written reports
I. Write a descriptive essay
J. Diagram daily activities
K. Create descriptive statements about photographs and pictures
L. Listen and respond to oral dialogs, stories, and statements
M. Discuss table settings in a restaurant
N. Plan a menu

French and Spanish III

First Nine Weeks

A. Understand statements related to classes and school
B. Use learned vocabulary to gather and assimilate information from conversations
C. Initiate and maintain a substantive conversation
D. Read, analyze, and draw conclusions based on unfamiliar material
E. Read and comprehend authentic materials
F. Write paragraphs and letters describing personal experiences
G. Engage in creative writing
H. Recognize names of various food items or dishes
I. Differentiate between complaints and compliments
J. Order from a restaurant menu
K. Ask permission or make polite requests
L. Read items on a shopping list
M. Follow a simple recipe
N. Write a shopping list
O. Plan a menu for a particular meal
P. Write a letter of compliment or complaint
Q. Identify places and means of transportation
R. Express movement in the past
S. Read and gather information from authentic sources
T. Write letters comparing and contrasting specific people or ideas
U. Write letters or postcards describing a recent trip

Second Nine Weeks

A. Listen to conversations, assimilate information, and draw conclusions
B. Give opinions using comparatives and superlatives
C. Read a department store directory
D. Read clothing tags, advertisements, or conversion charts
E. Write a shopping list
F. Write letters describing and comparing friends
G. Communicate about markets, shops, stores, and flea markets
H. Discuss prices and bartering
I. Describe the use of personal care items orally and in writing
J. Express agreement and disagreement to situations orally and in writing

French and Spanish III cont'd

K. Compare and contrast daily class schedule and routines with others
L. Analyze cultural and linguistic heritage elements of French and Hispanic populations
M. Investigate French and Spanish linguistic and geographical connections to the U.S.
N. Evaluate and describe films
O. Research and report on popular pastimes
P. Request and provide information about the post office, community services, and city offices
Q. Read, comprehend, and properly address mail and written correspondence

French and Spanish IV

First Nine Weeks

A. Identify vocabulary related to air travel
B. Communicate with Spanish-speakers in situations dealing with air travel
C. Describe one's own geographical area, including climate and points of interest
D. Read and gather information from authentic sources
E. Write letters related to travel in French and Spanish-speaking countries
F. Identify and use vocabulary related to the automobile and automotive services.
G. Communicate and gather information about health care problems; report on solutions
H. Prepare a written statement about car problems and transportation alternatives
I. Identify and communicate about various forms of transportation
J. Give oral directions detailing driving etiquette and rules
K. Ask for and provide telephone numbers
L. Give directions on how to contact others via telephone and mail
M. Take accurate dictation from a telephone message
N. Listen and respond to vocabulary related to hotels and banks
O. Make reservations for overnight accommodations
P. Fill out a hotel reservation form
Q. Write a letter of complaint or compliment to hotel managers
R. Describe the significance of youth homestays

Second Nine Weeks

A. Express understanding and respond to medical advice from a doctor or other medical personnel
B. Exchange information about one's physical condition
C. Follow health and fitness instructions
D. Write a note explaining absences due to illness
E. Report on procedures for visiting a doctor's office
F. Identify members and guests of a wedding party and wedding photos
G. Interview and report on ingredients of a happy marriage or relationship
H. Read and gather information from social invitations
I. Prepare a written response to an invitation
J. Investigate and report on cultural differences and similarities of marriage customs in French, Spanish-speaking countries, and the United States
K. Investigate and report on artistic talents and occupational preferences

French and Spanish V

First and Second Nine Weeks

A. Understand and interpret oral and written authentic texts and dialogs
B. Create a personal resume
C. Create activity survey and analyze information gathered
D. Engage in conversation using a combination of complex tenses
E. Present a variety of information and ideas to listeners and readers
F. Express what people do for themselves
G. Demonstrate an understanding of cultures, traditions and products
H. Acquire and use information from various authentic sources
I. Discuss and respond to contrary-to-fact situations
J. Conduct interviews and report on activities and preferences
K. Analyze literary texts and complex grammar structures
L. Respond to critical elements in films and texts
M. Write essays using complex grammatical elements
N. Create poetry and literary self-portraits
O. Identify and discuss main idea of complex literary material
P. Obtain detailed information via oral interviews
Q. Write suggestions about travel and extracurricular activities
R. Write movie reviews
S. Discuss future plans
T. Make a restaurant reservation over the telephone
U. Compare and contrast personality characteristics of teachers and classmates
V. Write a comprehensive essay about a favorite teacher
W. Discuss and express opinions on complex national and global issues
X. Prepare written and oral reports about future activities under specific conditions
Y. Create a collage and brochure detailing a museum visit
Z. Make persuasive school posters suggesting positive activities and behaviors for success
AA. Prepare and participate in a full news broadcast with commercial interruptions
BB. Communicate orally and in writing about personal experiences with natural disasters
CC. Discuss personal and professional goals

Latin I

First Nine Weeks

A. Initiate, respond to and use greetings and class commands
B. Identify three parts of speech (nouns, adjectives and verbs)
C. Identify sentence components (subjects, verbs, linking verbs and complements)
D. Form, identify and use correctly singular and plural forms of nouns, adjectives and verbs
E. Identify direct objects, transitive and intransitive verbs and translate correctly
F. Form and use correctly singular and plural direct objects (1st-3rd declension)
G. Compose and translate sentences using complementary infinitives
H. Identify the gender of nouns and use correct forms of adjectives to modify them.
I. Explain and use correctly the nominative, accusative and vocative forms of nouns and adjectives
J. Identify the declension of a noun and give all endings and its gender
K. Identify and use correctly the personal endings of verbs

Latin I cont'd

L. Reproduce Latin vowels, consonants and diphthongs; read Latin aloud with correct accentuation
M. Locate relevant continents, countries, cities/towns, rivers and bodies of water on a map
N. Describe and model Roman clothing
O. Compare/contrast Roman and American education
P. Recite numerals 1-20 in Latin; convert Roman numerals to Arabic and vice versa
Q. Describe the events of the Trojan War and analyze its importance to the Romans
R. Compare/contrast Roman and American houses; describe the function of each room
S. Analyze Roman slavery and compare/contrast it with American slavery
T. Give Latin names for parts of the human body; analyze English derivatives
U. Examine life in the city of Pompeii and the impact/importance of the eruption of Mt. Vesuvius

Second Nine Weeks

A. Identify prepositions that govern the accusative and ablative cases
B. Compose prepositional phrases using accusative and ablative cases
C. Identify the conjugation number of verbs and create present tense forms
D. Compose and obey positive and negative commands
E. Use the genitive case to indicate possession
F. Use the ablative case to express place, time, manner, means and accompaniment
G. Generate and use correctly present tense forms of *esse* and *posse*
H. Use the imperfect tense of regular verbs to describe repeated or incomplete past actions
I. Identify and translate neuter nouns correctly
J. Tabulate and use adverbs in Latin sentences
K. Identify and generate correct forms of i-stem nouns
L. Form and use present and imperfect tense forms of irregular verbs *esse*, *posse*, *velle*, *nolle*, *ferre*, *ire*
M. Compose an original essay describing childhood activities
N. Examine the myth of Romulus and Remus and their importance in Roman identify
O. Identify the Greek and Roman gods and goddesses and examine their myths
P. Analyze the treatment of slaves and Roman attitudes toward slavery
Q. Describe and examine food and dining practices of the Romans
R. Examine the seven kings of Rome and their impact on future governmental systems of the Romans
S. Investigate cultural celebrations like Saturnalia and Lupercalia
T. Examine daily practices like bathing and funerals/burials

Latin II

First Nine Weeks

A. Review grammar concepts and vocabulary from Latin I
B. Identify and give endings for 1st/2nd and 3rd declension adjectives
C. Identify and give endings for 1st/2nd and 3rd declension adjectives
D. Compose noun-adjective phrases that agree grammatically
E. Form the future tense of regular and irregular verbs
F. Compose an original essay describing plans after graduation

Latin II cont'd

G. Use the perfect tense to describe one-time, completed past actions
H. Compose an original essay describing the morning routine
I. Use the dative case to indicate possession, with indirect objects, special verbs and adjectives
J. Identify and tell the uses of the principal parts of verbs
K. Analyze legendary heroes of Rome and the qualities they demonstrate
L. Examine and compare/contrast Roman travel and roads
M. Explore the seven hills of Rome and their importance in the development of the city
N. Participate in a market simulation
O. Describe features of Roman hospitality
P. Examine life in the Roman frontier and compare/contrast it with American frontier life
Q. Analyze the early republic and compare/contrast it with the monarchy

Second Nine Weeks

A. Use the pluperfect and future perfect tenses to describe actions
B. Generate and use correctly the partitive genitive
C. Identify and give forms of 4th/5th declension nouns
D. Generate and use correctly the demonstratives *hic* and *ille*
E. Use possessive adjectives and personal and reflexive pronouns to describe objects
F. Analyze the causes and outcomes of the 1st and 2nd Punic Wars
G. Discuss and examine aqueducts, memorial inscriptions and monuments
H. Examine Roman expansion into north Africa and cultural assimilation
I. Analyze Roman imperialism
J. Examine and compare chariot racing
K. Research Romans from Africa

Latin III

First Nine Weeks

A. Identify nouns from the five declensions and give all case endings
B. Use the nominative, genitive, dative, accusative, ablative and vocative forms of nouns correctly
C. Identify adjectives as 1st/2nd declension or 3rd declension and give all endings
D. Make adjectives correctly modify nouns of any declension
E. Identify the conjugation number of regular verbs and give all forms in the active voice
F. Give all active forms of the irregular verbs *esse, posse, velle, nōlle, ferre* and *īre*
G. Complete sentences with correct forms of reg. and irreg. Verbs
H. Form, translate and use correctly the positive and negative imperative forms of verbs
I. Identify and use correctly subject pronouns and reflexive pronouns
J. Translate, interpret, and summarize events from a chapter story
K. Answer Latin questions about the story
L. Give the forms of the relative pronoun *quī, quae, quod* and use them correctly in Latin sentences
M. Describe and identify trends in the grooming practices of Roman women
N. Give English derivatives for the Latin vocabulary
O. Read aloud in Latin with correct pronunciation

Latin III cont'd

P. Give the forms of the indefinite adjective/pronoun (*quidam, quaedam, quoddam*) and the interrogative pronoun (*quis, quis, quid*)
Q. Identify and translate compound verbs in Latin sentences
R. Describe, compare and contrast homes of the Romans and American homes/apartments
S. Give the forms of regular verbs and the irregular verb *ferre* in the passive voice, present system and use them correctly in Latin sentences
T. Identify important figures in the late Republic (Gracchi brothers, Marius, Pompey, Sulla) and explain the significance of their accomplishments
U. Identify and form present passive infinitives use them correctly in Latin sentences
V. Identify ablative of personal agent and ablative of instrument/means with passive voice
W. Learn the demonstrative adj./pron. *hic, haec, hoc; ille, illa, illud; ipse, ipsa, ipsum; īdem, eadem, idem*
X. Give the forms of regular verbs and the irregular verb ferre in the passive voice, perfect system and use them correctly in Latin sentences
Y. Identify perfect passive participles used alone and translate them appropriately
Z. Describe, compare and contrast Roman food and dining practices with those of Americans
AA. Create comparative and superlative degree forms of adjectives and use and translate them correctly
BB. Research a topic dealing with the Roman military or civil service and present it to the class
CC. Create positive, comparative and superlative degree forms of adverbs and use and translate them correctly
DD. Write comparisons in Latin in two formats
EE. Identify important figures in the late republic (Caesar, Cicero, Pompey) and explain the effects of the events of this historical period

Second Nine Weeks

A. Translate, interpret, and summarize events from a chapter story
B. Answer Latin questions about a story
C. Identify the Kalends, Nones and Ides in each month and convert dates from Latin to English and from English to Latin
D. Explain the Roman system of specifying years (consular and AUC dating) and convert years from BC/AD to AUC and vice versa
E. Describe the different uses of the word *quam* and translate it correctly in Latin sentences
F. Give English derivatives for the Latin vocabulary and read aloud in Latin with correct pronunciation
G. Explain and identify deponent verbs and give their forms in all six tenses and translate them correctly in Latin sentences
H. Use deponent verbs correctly to translate sentences into Latin
I. Give the forms of cardinal and ordinal numbers and use them correctly in Latin sentences
J. Research a Roman emperor and present a report to the class
K. Describe, compare and contrast Roman education with American education and describe the Romans' views on education

Latin III cont'd

L. Use the accusative, ablative and locative forms of cities, towns and small islands to indicate motion toward, from or in a place
M. Use the accusative and ablative cases to indicate duration of time or time when/within which
N. Describe and answer questions about the first emperor and translate the first seven lines of the *Aeneid*
O. Give the forms of semi-deponent verbs in all six tenses and compare/contrast them with non-deponent and deponent verbs
P . Use semi-deponent verbs correctly in Latin sentences
Q. Identify present participles in Latin sentences and give forms
R. Describe, compare and contrast Roman writing practices with those of Americans
S. Identify perfect passive participles used alone and translate them appropriately
T. Describe, compare and contrast Roman food and dining practices with those of Americans
U. Form and translate the perfect active infinitive of verbs and use it correctly to translate sentences into Latin
V. Form, identify and translate the imperfect and pluperfect subjunctive active tenses
W. Identify and translate subordinates clauses that require the subjunctive mood (*cum* circumstantial, *cum* causal, indirect questions)
X. Describe and answer questions about piracy in the Roman world
Y. Form, identify and translate the imperfect and pluperfect subjunctive active and passive tenses
Z. Identify and translate subordinates clauses that require the subjunctive mood (*cum* circumstantial, *cum* causal, indirect questions)
AA. Describe, compare, and contrast Roman bathing practices with those of Americans and identify the rooms of a bath and their functions
BB. Identify ablatives absolute in Latin sentences and translate them appropriately
CC. Identify linking *quī* in Latin sentences and tell to what it refers
DD. Describe, compare and contrast Roman bathing practices with those of Americans and identify the rooms of a bath and their functions

Latin IV

First Nine Weeks

A. Identify nouns from the five declensions and give all case endings
B. Use the nominative, genitive, dative, accusative, ablative and vocative forms of nouns correctly
C. Identify adjectives as 1st/2nd declension. or 3rd declension and give all endings
D. Create the comparative and superlative forms of adjectives
E. Make adjectives correctly modify nouns of any declension
F. Create adverbs (all three degrees) from adjectives
G. Give principal parts of verbs and tell what stems are used to create verb forms
H. Identify the conjugation number of regular verbs and give all forms in the active and passive voice
I. Give all active forms (and passive, where applicable) of the irregular verbs *esse, posse, velle, nōlle, ferre* and *īre*

Latin IV cont'd

J. Complete sentences with correct forms of reg. and irreg. verbs
K. Form, translate, and use correctly the positive and negative imperative forms of verbs
L. Form and translate imperfect and pluperfect subjunctive, active voice in Latin sentences
M. Form, translate, and identify deponent verbs in Latin sentences
N. Identify and use correctly subject, reflexive and relative pronouns
O. Translate, interpret, and summarize events from a chapter story
P. Answer Latin questions about a story
Q. Give the forms of the relative pronoun *quī, quae, quod* and use them correctly in Latin sentences
R. Give English derivatives for the Latin vocabulary
S. Read aloud in Latin with correct pronunciation
T. Form, translate and use correctly the future active participle of verbs
U. Form, translate and use the accusative-infinitive construction for indirect statement
V. Conjugate and translate the irregular verb *malle* in present, imperfect and future tenses
W. Form active and passive infinitives of regular and deponent verbs and use them correctly in indirect statements
X. Describe and answer questions about the gladiatorial competitions of ancient Rome
Y. Participate in a re-enactment of a gladiatorial competition
Z. Conjugate, translate, and use correctly the present subjunctive (active and passive) of verbs
AA. Form, translate and identify result clauses in Latin sentences
BB. Use the rules of sequence of tenses when composing Latin sentences
CC. Describe and answer questions about Roman weddings and compare/contrast them with American customs
DD. Participate in a mock wedding
EE. Form and translate indirect commands and identify verbs typically used with indirect commands
FF. Describe and answer questions about the coming-of-age ceremony held for young men
GG. Identify and translate impersonal verbs in Latin sentences
HH. Form, translate and identify purpose clauses in Latin sentences
II. Describe and answer questions about Roman funerals and burials and compare/contrast them with American customs

Second Nine Weeks

A. Read authentic Latin passages and discuss the political events that led to the end of the republic (first triumvirate, Cicero)
B. Form and translate gerunds in Latin sentences
C. Read authentic Latin passages and discuss the political events that led to the formation of the Empire (second triumvirate, Cleopatra)
D. Recognize and identify figures of speech used in Latin passages
E. Read and translate excerpts from *In Catilinam* and explain the cultural significance of the betrayal of Catiline
F. Form and translate gerundives in Latin sentences
G. Form and translate clauses of fearing
H. Translate poetry of Horace, Catullus, Ovid and Vergil

Latin IV cont'd

I. Scan several poetic meters (hendecasyllabic, dactylic hexameter and elegiac couplet) and read aloud poetry in meter
J. Form, translate and identify hortatory and jussive subjunctive in Latin sentences
K. Translate descriptions of Clodius' murder and compare and contrast the two accounts
L. Translate historical accounts by Livy, Pliny, Suetonius and Tacitus
M. Compare historical figures and describe their impact on Roman history
N. Translate and act out (in Latin) a play by Plautus or Terence

HEALTH AND PHYSICAL EDUCATION

Grade 9

Dance

Course Description: The amount of expansion and reinforcement of the introduced dance and technical skills and concepts for each course will be determined by the needs and interests of the students. Each course is a two-year plan of study. The material taught each nine weeks is designed to increase mastery of the skills and concepts needed for successful achievement in each dance course.

General Dance

Topics Addressed Each Nine Weeks

I. Performance and Choreography—alignment, movement vocabulary, performance practices, improvisation skills, movement invention skills, choreographic studies

II. Cultural Context and Dance history periods, styles, artists, related professions

III. Judgment and Criticism

IV. Aesthetics

Dance I

Topics Addressed Each Nine Weeks

I. Performance and Choreography—alignment, movement vocabulary, performance practices, improvisation skills, movement invention skills, choreographic studies

II. Cultural Context and Dance history periods, styles, artists, related professions

III. Judgment and Criticism

IV. Aesthetics

Dance II

Topics Addressed Each Nine Weeks

I. Performance and Choreography—alignment, movement vocabulary, performance practices, improvisation skills, movement invention skills, choreographic studies

II. Cultural Context and Dance History periods, styles, artists, related professions

III. Judgment and Criticism

IV. Aesthetics

Dance III

Topics Addressed Each Nine Weeks

I. Performance and Choreography—alignment, movement vocabulary, performance practices, improvisation skills, movement invention skills, choreographic studies

II. Cultural Context and Dance History periods, styles, artists, related professions

III. Judgment and Criticism

IV. Aesthetics

Dance IV

Topics Addressed Each Nine Weeks

I. Performance and Choreography—alignment, movement vocabulary, performance practices, improvisation skills, movement invention skills, choreographic studies

II. Cultural Context and Dance History periods, styles, artists, related professions

III. Judgment and Criticism

IV. Aesthetics

<u>Health and Physical Education</u>

First Nine Weeks

Health

A. Drug Abuse Preventions
B. Disease Prevention
C. Nutrition
D. Personal Health
E. First Aid

Physical Education

A. Fitness
B. Rhythms
C. Soccer
D. Softball
E. Flag Football
F. Speedball

Second Nine Weeks

Health

A. Developing Understand Skills
B. Developing a positive self-concept
C. Use of appropriate vocabulary in Family Life Education
D. Develop an understanding of human sexuality
E. Understand the effects of sexually transmitted diseases
F. Developing long term plans for a career
G. Substance abuse prevention

Physical Education

A. Fitness (testing)
B. Basketball
C. Volleyball
D. Table tennis
E. Tennis
F. Track and field

Weight Training

First Nine Weeks

A. Develop an understanding for the need for weight training
B. Demonstrate all safety rules related to weight training
C. Demonstrate the ability to stretch and warm-up before any weight training activity
D. Upper body exercises: Bench Press, Dumbbell Press, Barbell Curl, Lat Pull-downs, and Dead Lift
E. Lower body exercises: Leg Extensions, Thigh Curls, Leg Press, and Toe Raises

Second Nine Weeks

A. Explain the importance of good nutrition and weight training
B. Explain how drugs can affect weight training
C. Upper body exercise: Standing Triceps Extension, Triceps Kickbacks, Inclined Bench Press, and Barbell Rowing
D. Lower body exercise: Wide Stance Squats, Front Lunge, and Heel Raises

Grade 10

Health and Physical Education 10

First Nine Weeks

Health/Driver Education

A. Highway safety
B. DMV and the law
C. Mechanics of a Vehicle
D. Chemical Factors and Driving
E. Driving-Mental Aspects
F. Defensive Driving
G. Map skills

<u>Health and Physical Education 10</u> cont'd

H. Driving and Emergencies

Physical Education

A. Fitness
B. Rhythms
C. Soccer
D. Flag Football
E. Tennis
F. Golf

Second Nine Weeks

Health

A. Develop appropriate attitudes for responsible adulthood
B. Develop long term plans for achieving career goals
C. Use of appropriate vocabulary in Family Life Education
D. Develop an understanding of human sexuality
E. Develop a positive self-concept
F. Understand the effects of sexually transmitted diseases
G. Develop wholesome attitudes towards his/her own sexuality

Physical Education

A. Fitness (testing)
B. Volleyball
C. Softball
D. Basketball
E. Speedball

<u>Weight Training</u>

First Nine Weeks

A. Develop an understanding for the need for weight training
B. Demonstrate all safety rules related to weight training
C. Demonstrate the ability to stretch and warm-up before any weight training activity
D. Upper body exercises: Bench Press, Dumbbell Press, Barbell Curl, Lat Pull-downs, and Dead lift
E. Lower body exercises: Leg Extensions, Thigh Curls, Leg Press, and Toe Raises

Second Nine Weeks

A. Explain the importance of good nutrition and weight training
B. Explain how drugs can affect weight training
C. Upper body exercise: Standing Triceps Extension, Triceps Kickbacks, Inclined Bench Press, and Barbell Rowing
D. Lower body exercise: Wide Stance Squats, Front Lunge, and Heel Raises

Grade 11

Health and Physical Education 11 and 12

First Nine Weeks

A. Personal Physical Fitness
1. Practicing Fitness
2. Exercising Safety
3. Designing a Personal Fitness Room w/Budget
4. Personal Fitness Labs

Second Nine Weeks

B. Leadership
1. Teaching and Evaluating Skills
2. Biomechanical Principles and Movement
3. Conducting Practice
4. Officiating Team Sports/Scorekeeping
5. Coach or Teach a Game or Sport
6. Conducting/Designing Warm-ups/Cool downs
7. Invent a game
8. Physical Education Leadership Labs

C. Lifetime Sports/Lifetime Activities
1. Introduction to Lifetime Sports Lab
2. Design/play a Frisbee golf course
3. Teach a lifetime activity

MATHEMATICS

Grade 7

Algebra I

First Nine Weeks

I. Expressions and Operations
- A. Represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables
- B. Apply the laws of exponents to perform operations on expressions
- C. Express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form
- D. Model and find sums and differences of polynomials

II. Equations and Inequalities
- A. Solve multistep linear and quadratic equations in two variables, including
  1. Solving literal equations (formulas) for a given variable;
  2. Justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
  3. Solving multistep linear equations algebraically and graphically;

Algebra I cont'd

B. Determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined

C. Solve multistep linear inequalities in two variables, including

1. Solving multistep linear inequalities algebraically and graphically;
2. Justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;
3. Solving real-world problems involving inequalities; and

Second Nine Weeks

D.

1. Write the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line
2. Given a situation in a real-world context, will analyze a relation to determine whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically

I. Functions and Statistics

A. Investigate function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

B. Analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

II. Equations and Inequalities

1. Solving quadratic equations algebraically and graphically;
2. Solving systems of two linear equations and inequalities in two variables algebraically and graphically; and
3. Solving and writing real-world problems involving equations and systems of equations. Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions.
4. Solving systems of inequalities

Algebra I cont'd

Third Nine Weeks

I. Expressions and Operations
- A. Add, subtract, multiply, and divide polynomials
- B. Factor completely first- and second-degree binomials and trinomials in one or two variables. Graphing calculators will be used as a tool for factoring and for confirming algebraic factorizations

II. Equations and Inequalities
- A. Solving quadratic equations algebraically and graphically;

III. Functions and Statistics
- A. Collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions.
- B. Compare and contrast multiple univariate data sets, using box-and-whisker plots
- C. Given a set of data, will interpret variation in real-world contexts and calculate and interpret mean absolute deviation, standard deviation, and z-scores.

Fourth Nine Weeks

- D. Review and SOL Testing

Grade 7 Mathematics

First Nine Weeks

I. Computation and Estimation
- A. Model addition, subtraction, multiplication, and division of integers
- B. Add, subtract, multiply, and divide integers
- C. Simplify expressions involving integers
- D. Solve practical problems involving integers

II. Number and Number Sense
- A. Compare and order fractions, decimals, percents, and numbers written in scientific notation;
- B. Identify and describe absolute value for rational numbers

III. Computation and Estimation
- A. Solve practical problems involving percents mentally and on paper
- B. Write and solve proportions, including conversions and scale models

IV. Probability and Statistics
- A. Investigate and describe the difference between the experimental probability and theoretical probability of an event
- B. Determine the probability of compound events, using the Fundamental (Basic) Counting Principle

Grade 7 Mathematics only

Second Nine Weeks

I. Number and Number Sense
- A. Investigate and describe the concept of negative exponents for powers of ten;
- B. Determine square roots

II. Number and Number Sense
- A. Describe arithmetic and geometric sequences, using variable expressions
- B. Represent arithmetic and geometric sequences, using variable expressions

III. Patterns, Functions, and Algebra
- A. Represent relationships with tables, graphs, rules, and words
- B. Write verbal expressions as algebraic expressions and sentences as equations and vice versa
- C. Evaluate algebraic expressions for given replacement values of the variables
- D. Apply the following properties of operations with real numbers:
  1. The commutative and associative properties for addition and multiplication;
  2. The distributive property;
  3. The additive and multiplicative identity properties;
  4. The additive and multiplicative inverse properties; and
  5. The multiplicative property of zero.
- E. Solve one- and two-step linear equations in one variable
- F. Solve practical problems requiring the solution of one- and two-step linear equations
- G. Solve one-step inequalities in one variable
- H. Graph solutions to inequalities on the number line

Third Nine Weeks

I. Geometry and Measurement
- A. Compare and contrast the following quadrilaterals based on properties: parallelogram, rectangle, square, rhombus, and trapezoid
- B. The student, given a polygon in the coordinate plane, will represent transformations (reflections, dilations, rotations, and translations) by graphing in the coordinate plane
- C. Describe volume and surface area of cylinders;
- D. Solve practical problems involving the volume and surface area of rectangular prisms and cylinders;
- E. Describe how changing one measured attribute of a rectangular prism affects its volume and surface area

I. Probability and Statistics
- A. Given data for a practical situation construct and analyze histograms
- B. Given data for a practical situation compare and contrast histograms with other types of graphs presenting information from the same data set

Fourth Nine Weeks

Review and SOL Testing

Grade 8

<u>Algebra I</u> (Middle School)

First Nine Weeks

I. Expressions and Operations

A. Represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables

B. Apply the laws of exponents to perform operations on expressions

C. Express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form

II. Equations and Inequalities

A. Solve multistep linear and quadratic equations in two variables, including

1. Solving literal equations (formulas) for a given variable;
2. Justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
3. Solving multistep linear equations algebraically and graphically;

B. Determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined

C. Write the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line

D. Solve multistep linear inequalities in two variables, including

1. Solving multistep linear inequalities algebraically and graphically;
2. Justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;
3. Solving real-world problems involving inequalities; and

Second Nine Weeks

I. Functions and Statistics

A. Investigate function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

B. Analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including

Algebra I (Middle School)

concrete, verbal, numeric, graphic, and algebraic

II. Equations and Inequalities
1. Solving quadratic equations algebraically and graphically;
2. Solving systems of two linear equations in two variables algebraically and graphically; and
3. Solving real-world problems involving equations and systems of equations. Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions.
4. Solving systems of inequalities

Third Nine Weeks

I. Expressions and Operations
A. Add, subtract, multiply, and divide polynomials
B. Factor completely first- and second-degree binomials and trinomials in one or two variables. Graphing calculators will be used as a tool for factoring and for confirming algebraic Factorizations

II. Functions
A. Given a situation in a real-world context, will analyze a relation to determine whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically

III. Equations and Inequalities
A. Solving quadratic equations algebraically and graphically;

Fourth Nine Weeks

II. Functions and Statistics
A. Collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions
B. Compare and contrast multiple univariate data sets, using box-and-whisker plots
C. Given a set of data, will interpret variation in real-world contexts and calculate and interpret mean absolute deviation, standard deviation, and z-scores.
D. Review and SOL Testing

Geometry (Middle School)

First Nine Weeks

I. Review prerequisite skills

II. Reasoning, Lines, and Transformations
A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation including
1. Investigating and using formulas for finding distance, midpoint, and slope;
B. Use the relationships between angles formed by two lines cut by a transversal to

<u>Geometry</u> cont'd (Middle School)

1. Determine whether two lines are parallel;
2. Verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and
3. Solve real-world problems involving angles formed when parallel lines are cut by a transversal.

C. Construct and justify the constructions of
1. A line segment congruent to a given line segment;
2. The perpendicular bisector of a line segment;
3. A perpendicular to a given line from a point not on the line;
4. A perpendicular to a given line at a given point on the line;
5. The bisector of a given angle,
6. An angle congruent to a given angle; and
7. A line parallel to a given line through a point not on the given line

Second Nine Weeks

I. Reasoning, Lines, and Transformations

A. Construct and judge the validity of a logical argument consisting of a set of premises and a conclusion including
1. Identifying the converse, inverse, and contrapositive of a conditional statement;
2. Translating a short verbal argument into symbolic form;
3. Using Venn diagrams to represent set relationships; and
4. Using deductive reasoning

B. Given information concerning the lengths of sides and/or measures of angles in triangles, will
1. Order the sides by length, given the angle measures;
2. Order the angles by degree measure, given the side lengths;
3. Determine whether a triangle exists; and
4. Determine the range in which the length of the third side must lie. These concepts will be considered in the context of real-world situations

II. Triangles

A. Given information in the form of a figure or statement, will prove two triangles are congruent, using algebraic and coordinate methods as well as deductive proofs

B. Given information in the form of a figure or statement, will prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs

C. Solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry

III. Reasoning, Lines, and Transformations

A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include
1. Investigating symmetry and determining whether a figure is symmetric with respect to a line or a point
2. Determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.

Third Nine Weeks

I. Polygons and Circles

A. Solve real-world problems involving angles of polygons

II. Polygons and Circles

A. Verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems

B. Given the coordinates of the center of a circle and a point on the circle, will write the equation of the circle74

C. Constructions

1. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle
2. Construct the inscribed and circumscribed circles of a triangle
3. Construct a tangent line from a point outside a given circle to the circle

D. Use angles, arcs, chords, tangents, and secants to

1. Investigate, verify, and apply properties of circles;
2. Solve real-world problems involving properties of circles; and
3. Find arc lengths and areas of sectors in circles

III. Three Dimensional Figures

A. Use formulas for surface area of three-dimensional objects to solve real-world problems

B. Use formulas for volume of three-dimensional objects to solve real-world problems

C. Use similar geometric objects in two- or three-dimensions to

1. Compare ratios between side lengths, perimeters, areas, and volumes;
2. Determine how changes in one or more dimensions of an object affect area and/or volume of the object
3. Determine how changes in area and/or volume of an object affect one or more dimensions of the object
4. Solve real-world problems about similar geometric objects

Fourth Nine Weeks

D. Review and SOL Testing

<u>Grade 8 Mathematics</u>

First Nine Weeks

I. Number and Number Sense

A. Describe orally and in writing the relationship between the subsets of the real number system

B. Determine whether a given number is a perfect square

C. Find the two consecutive whole numbers between which a square root lies

D. Simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers

E. Compare and order decimals, fractions, percents, and numbers written in scientific notation

F. Apply the order of operations to evaluate algebraic expressions for given replacement values of the variables

Grade 8 Mathematics cont'd

II. Computation and Estimation
- A. Solve practical problems involving rational numbers, percents, ratios, and proportions
- B. Determine the percent increase or decrease for a given situation

III. Probability and Statistics
- A. Determine the probability of independent events with and without replacement
- B. Determine the probability of dependent events with and without replacement

IV. Geometry
- A. Determine whether a given number is a perfect square
- B. Verify the Pythagorean Theorem
- C. Apply the Pythagorean Theorem
- D. Find the two consecutive whole numbers between which a square root lies

Second Nine Weeks

I. Probability and Statistics
- A. Make comparisons, predictions, and inferences, using information displayed in graphs
- B. Construct and analyze scatterplots

II. Patterns, Functions, and Algebra
- A. Make connections between any two representations (tables, graphs, words, and rules) of a given relationship
- B. Graph a linear equation in two variables
- C. Identify the domain, range, independent variable, or dependent variable in a given situation
- D. Solve multistep linear equations in one variable with the variable on one and two sides of the equation
- E. Solve two-step linear inequalities and graph the results on a number line
- F. Identify properties of operations used to solve an equation

Third Nine Weeks

III. Measurement
- A. Verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles
- B. Measure angles of less than 360°
- C. Investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids
- D. Describe how changing one measured attribute of a figure affects the volume and surface area

Grade 8 Mathematics cont'd

I. Geometry
A. Apply transformations to plane figures
B. Identify applications of transformations
C. Solve practical area and perimeter problems involving composite plane figures
D. Construct a three-dimensional model, given the top or bottom, side, and front views

Fourth Nine Weeks
Review and SOL Testing

Grades 9-12

Algebra IA

First Nine Weeks
I. Expressions and Operations
A. Represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables
B. Apply the laws of exponents to perform operations on expressions
C. Express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form

II. Equations and Inequalities
A. Solve multistep linear and quadratic equations in two variables, including
1. Solving literal equations (formulas) for a given variable;
2. Justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
3. Solving multistep linear equations algebraically and graphically;
B. Solve multistep linear inequalities in two variables, including
1. Solving multistep linear inequalities algebraically and graphically;
2. Justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;
3. Solving real-world problems involving inequalities; and
C. Determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined
D. Write the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line

Second Nine Weeks
I. Solve multistep linear inequalities in two variables, including (Cont'd)
1. Solving multistep linear inequalities algebraically and graphically;
2. Justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;
3. Solving real-world problems involving inequalities

II. The student, given a situation in a real-world context, will analyze a relation to determine

whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically

III. The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real world problems, using mathematical models. Mathematical models will include linear and quadratic functions.

IV. Solving systems of two linear equations and inequalities in two variables algebraically and graphically; and solving real-world problems involving equations and systems of equations

Review and Assessment

Algebra IB
First Nine Weeks

*Review of Algebra IA
I. Expressions and Operations
A. Add, subtract, multiply, and divide polynomials
B. Factor completely first- and second-degree binomials and trinomials in one or two variables. Graphing calculators will be used as a tool for factoring and for confirming algebraic factorizations

II. Equations and Inequalities
A. Solving quadratic equations algebraically and graphically;

III. Functions and Statistics
A. Investigate function (quadratic) families and their characteristics both algebraically and graphically, including
1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

IV. Functions and Statistics
A. Collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions
B. Compare and contrast multiple univariate data sets, using box-and-whisker plots

Second Nine Weeks
A. Given a set of data, will interpret variation in real-world contexts and calculate and interpret mean absolute deviation, standard deviation, and z-scores.
B. Comparing and contrasting multiple univariate data sets, using box-and-whisker plots.
C. Review and SOL Testing

Algebra I

First Nine Weeks

I. Expressions and Operations

A. Represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables

B. Apply the laws of exponents to perform operations on expressions

C. Express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form

II. Equations and Inequalities

A. Solve multistep linear and quadratic equations in two variables, including

1. Solving literal equations (formulas) for a given variable;
2. Justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
3. Solving multistep linear equations algebraically and graphically;

B. Solve multistep linear inequalities in two variables, including

1. Solving multistep linear inequalities algebraically and graphically;
2. Justifying steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers and its subsets;
3. Solving real-world problems involving inequalities

C. Determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined

D. Write the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line

E. Given a situation in a real-world context, will analyze a relation to determine whether a direct or inverse variation exists, and represent a direct variation algebraically and graphically and an inverse variation algebraically

III. Functions and Statistics

A. Investigate and analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

B. Collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear functions

Algebra I cont'd

IV. Equations and Inequalities
- A. Solving systems of two linear equations and inequalities in two variables algebraically and graphically; and solving real-world problems involving equations and systems of equations.
- B. Solving real-world problems involving inequalities

Second Nine Weeks

I. Expressions and Operations
- A. Multiplying and dividing polynomials
- B. The student will solve multistep quadratic equations in two variables, including
  1. solving literal equations (formulas) for a given variable;
  2. justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that arevalid for the set of real numbers and its subsets;
  3. solving quadratic equations algebraically and graphically;
  4. solving multistep linear equations algebraically and graphically;
  5. solving systems of two linear equations in two variables algebraically and graphically; and
  6. solving real-world problems involving equations and systems of equations.
- C. The student will investigate and analyze function quadratic) families and their characteristics both algebraically and graphically, including
  1. determining whether a relation is a function;
  2. domain and range;
  3. zeros of a function;
  4. *x*- and *y*-intercepts;
  5. finding the values of a function for elements in its domain; and
  6. making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic.

II. Probabality and Statistics
- A. The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real world problems, using mathematical models. Mathematical models will include quadratic functions.
- B. Compare and contrast multiple univariate data sets, using box-and-whisker plots
- C. Given a set of data, will interpret variation in real-world contexts and calculate and interpret mean absolute deviation, standard deviation, and z-scores.
- D. Review and SOL Testing

Algebra II

First Nine Weeks

I. Expressions and Operations

A. Given rational, radical, or polynomial expressions, will
   1. Add, subtract, multiply, divide, and simplify rational algebraic expressions;
   2. Add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents;
   3. Write radical expressions as expressions containing rational exponents and vice versa; and
   4. Factor polynomials completely

B. The student will perform operations on complex numbers, express the results in simplest form using patterns of the powers of i, and

C. Identify field properties that are valid for the complex numbers

II. Statistics

A. Identify, create, and solve real-world problems involving inverse variation, joint variation, and a combination of direct and inverse variations

III. Equations and Inequalities

A. Solve, algebraically and graphically,
   1. Absolute value equations and inequalities;
   2. Quadratic equations over the set of complex numbers;
   3. Equations containing rational algebraic expressions; and
   4. Equations containing radical expressions.

B. Graphing calculators will be used for solving and for confirming the algebraic solutions

C. Solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically

D. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions

IV. Functions

A. Investigate and analyze functions algebraically and graphically. Key concepts include
   1. Domain and range, including limited and discontinuous domains and ranges;
   2. Zeros;
   3. x- and y-intercepts;
   4. Intervals in which a function is increasing or decreasing;
   5. Asymptotes;
   6. End behavior;
   7. Inverse of a function; and
   8. Composition of multiple functions. Graphing calculators will be used as a tool to assist in investigation of functions

B. Investigate the relationships among solutions of an equation, zeros of a function, x-intercepts of a graph, and factors of a polynomial expression

Algebra II cont'd

Second Nine Weeks

I. Functions

A. Investigate the properties of arithmetic and geometric sequences and series to solve real-world problems, including writing the first n terms, finding the nth term, and evaluating summation formulas. Notation will include □ and an.

B. Apply the properties of arithmetic and geometric sequences and series to solve real-world problems, including writing the first n terms, finding the nth term, and evaluating summation formulas. Notation will include □ and an.

C. Recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of these Functions

II. Statistics

A. Compute and distinguish between permutations and combinations and use technology for applications

B. Collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Mathematical models will include polynomial, exponential, and logarithmic functions

C. Identify properties of a normal distribution and apply those properties to determine probabilities associated with areas under the standard normal curve

V. Review and SOL Testing

Geometry (90 Day)

First Nine Weeks

I. Review prerequisite skills

II. Reasoning, Lines, and Transformations

A. Construct and judge the validity of a logical argument consisting of a set of premises and a conclusion including

1. Identifying the converse, inverse, and contrapositive of a conditional statement;
2. Translating a short verbal argument into symbolic form
3. Using Venn diagrams to represent set relationships; and
4. Using deductive reasoning

III. Reasoning, Lines, and Transformations

A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation including

1. Investigating and using formulas for finding distance, midpoint, and slope;

B. Use the relationships between angles formed by two lines cut by a transversal to

1. Determine whether two lines are parallel;
2. Verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and

<u>Geometry</u> (90 Day) cont'd

3. Solve real-world problems involving angles formed when parallel lines are cut by a transversal.

C. Construct and justify the constructions of
1. A line segment congruent to a given line segment;
2. The perpendicular bisector of a line segment;
3. A perpendicular to a given line from a point not on the line;
4. A perpendicular to a given line at a given point on the line;
5. The bisector of a given angle,
6. An angle congruent to a given angle; and
7. A line parallel to a given line through a point not on the given line

IV. Given information concerning the lengths of sides and/or measures of angles in triangles, will
1. Order the sides by length, given the angle measures;
2. Order the angles by degree measure, given the side lengths;
3. Determine whether a triangle exists; and
4. Determine the range in which the length of the third side must lie. These concepts will be considered in the context of real-world situations

II. Triangles
A. Given information in the form of a figure or statement, will prove two triangles are congruent, using algebraic and coordinate methods as well as deductive proofs
B. Given information in the form of a figure or statement, will prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs
C. Solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry

Second Nine Weeks

I. Polygons and Circles
A. Solve real-world problems involving angles of polygons

II. Reasoning, Lines, and Transformations
A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include
1. Investigating symmetry and determining whether a figure is symmetric with respect to a line or a point
2. Determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.

III. Polygons and Circles
A. Verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems
B. Given the coordinates of the center of a circle and a point on the circle, will write the equation of the circle
C. Use angles, arcs, chords, tangents, and secants to
1. Investigate, verify, and apply properties of circles;

Geometry (90 Day) cont'd

2. Solve real-world problems involving properties of circles; and
3. Find arc lengths and areas of sectors in circles

Fourth Nine Weeks

I. Three Dimensional Figures
- A. Use formulas for surface area of three-dimensional objects to solve real-world problems
- B. Use formulas for volume of three-dimensional objects to solve real-world problems
- C. Use similar geometric objects in two- or three-dimensions to
  1. Compare ratios between side lengths, perimeters, areas, and volumes;
  2. Determine how changes in one or more dimensions of an object affect area and/or volume of the object
  3. Determine how changes in area and/or volume of an object affect one or more dimensions of the object
  4. Solve real-world problems about similar geometric objects

D. Review and SOL Testing

Geometry (Part 1)

First Nine Weeks

I. Review prerequisite skills

II. Reasoning, Lines, and Transformations A
- A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation including
  1. Investigating and using formulas for finding distance, midpoint, and slope;81
- B. Use the relationships between angles formed by two lines cut by a transversal to
  1. Determine whether two lines are parallel;
  2. Verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and
  3. Solve real-world problems involving angles formed when parallel lines are cut by a transversal.
- C. Construct and justify the constructions of
  1. A line segment congruent to a given line segment;
  2. The perpendicular bisector of a line segment;
  3. A perpendicular to a given line from a point not on the line;
  4. A perpendicular to a given line at a given point on the line;
  5. The bisector of a given angle,
  6. An angle congruent to a given angle; and
  7. A line parallel to a given line through a point not on the given line

III. Reasoning, Lines, and Transformations B
- A. Construct and judge the validity of a logical argument consisting of a set of premises and a conclusion including
  1. Identifying the converse, inverse, and contrapositive of a conditional statement;
  2. Translating a short verbal argument into symbolic form;
  3. Using Venn diagrams to represent set relationships; and
  4. Using deductive reasoning

<u>Geometry</u> (Part 1) cont'd

III. Triangles
- A. Given information concerning the lengths of sides and/or measures of angles in triangles, will
  1. Order the sides by length, given the angle measures;
  2. Order the angles by degree measure, given the side lengths;
  3. Determine whether a triangle exists; and
  4. Determine the range in which the length of the third side must lie. These concepts will be considered in the context of real-world situations

Second Nine Weeks

I. Triangles
- A. Given information in the form of a figure or statement, will prove two triangles are congruent, using algebraic and coordinate methods as well as deductive proofs
- B. Given information in the form of a figure or statement, will prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs
- C. Solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry

II. Polygons and Circles
- A. Solve real-world problems involving angles of polygons

III. Reasoning, Lines, and Transformations
- A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include
  1. Investigating symmetry and determining whether a figure is symmetric with respect to a line or a point
  2. Determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.
- B. Review and SOL Testing

<u>Geometry</u> (Part 2)

First Nine Weeks

*Review of Part 1

I. Polygons and Circles
- A. Solve real-world problems involving angles of polygons

II. Reasoning, Lines, and Transformations
- A. Use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include
  1. Investigating symmetry and determining whether a figure is symmetric with respect to a line or a point
  2. Determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.

<u>Geometry</u> (Part 2) cont'd

III. Polygons and Circles
- A. Verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems
- B. Given the coordinates of the center of a circle and a point on the circle, will write the
- C. equation of the circle
- D. Use angles, arcs, chords, tangents, and secants to
  1. Investigate, verify, and apply properties of circles;
  2. Solve real-world problems involving properties of circles; and
  3. Find arc lengths and areas of sectors in circles

IV. Three Dimensional Figures
- A. Use formulas for surface area of three-dimensional objects to solve real-world problems

Second Nine Weeks

I. Three Dimensional Figures
- A. Use formulas for surface area of three-dimensional objects to solve real-world problems
- B. Use formulas for volume of three-dimensional objects to solve real-world problems
- C. Use similar geometric objects in two- or three-dimensions to
  1. Compare ratios between side lengths, perimeters, areas, and volumes;
  2. Determine how changes in one or more dimensions of an object affect area and/or volume of the object
  3. Determine how changes in area and/or volume of an object affect one or more dimensions of the object
  4. Solve real-world problems about similar geometric objects
- D. Review and SOL Testing

<u>Algebra, Functions and Data Analysis</u>

First Nine Weeks

I. Investigate and analyze functions
- A. Identify domain and range for a relation given
  1. A set of ordered pairs
  2. A table
  3. A graph
- B. Find f(x) given x
- C. Identify the zeros of a function
  1. Algebraically
  2. Confirm using graphing calculator
- D. Identify algebraically or graphically
  1. Domain
  2. Range
  3. Zeros
  4. Intercepts
- E. Recognize restricted/discontinuous domains and ranges

Algebra, Functions and Data Analysis cont'd

F. Recognize graphs of parent functions for
   1. Linear functions
   2. Quadratic functions
   3. Exponential functions
   4. Logarithmic functions

G. Identify given the graph of a function
   1. Zeros
   2. y-intercepts
   3. Symmetry
   4. Asymptotes
   5. Intervals – increasing or decreasing
   6. Points of discontinuity
   7. End behavior
   8. Maximum and minimum points

H. Describe continuity
   1. On its domain
   2. At a point

I. Express intervals using interval notation and/or a compound inequality

II. Write an equation given the graph of a function using knowledge of transformations

A. Write an equation of a line given the graph

B. Recognize graphs of parent functions for
   1. Linear functions
   2. Quadratic functions
   3. Exponential functions
   4. Logarithmic functions

C. Write the equation of a linear, quadratic, exponential, or logarithmic function in (h,k) form given the graph of the parent function and transformation information

D. Describe the transformation from the parent function, given the equation written in (h,k) form

E. Given the equation of a function, recognize
   1. The parent function and transformation
   2. Graph the given function

F. Recognize the vertex of a parabola
   1. Given a quadratic equation
   2. Or given a graph

G. Describe the parent function represented by a scatter plot

III. Use the line of best fit to model applications and interpolate function values

A. Write an equation for the line of best fit given
   1. Set of data
   2. Points in a table
   3. A graph
   4. A practical situation

B. Make predictions using a line of best fit

C. Collect and analyze data, make decisions, and justify conclusions

Algebra, Functions and Data Analysis cont'd

D. Investigate scatter plots for
   1. Existence of a pattern
   2. Identify patterns

E. Use graphing calculator to find the curve of best fit for models including
   1. Linear functions
   2. Quadratic functions
   3. Exponential functions
   4. Logarithmic functions
   5. Make predictions using
      a. Data
      b. Scatter plots
      c. Equation of curve of best fit

F. Given a set of data, determine the model that would best fit the data

G. Explain errors in extrapolation

H. Estimate the correlation coefficient given the data and/or scatter plots

IV. Transfer between and analyze multiple representations of functions

A. Given an equation, use a graphing calculator to graph the following functions
   1. Linear
   2. Quadratic
   3. Exponential
   4. Logarithmic

B. Make predictions given a
   1. A table of Values
   2. A graph
   3. An algebraic formula

C. Describe relationships between data represented in
   1. A table
   2. A scatter plot
   3. As elements of a function

D. Determine representation of data from real-world situations

E. Analyze and interpret data in real-world situations

Second Nine Weeks

I. Use linear programming to identify constraints and determine optimal values

A. Model practical problems with systems of linear equalities

B. Solve systems of linear inequalities
   1. With paper/pencil
   2. Graphing calculator

C. Solve systems of equations algebraically and graphically

D. Identify feasibility region of system of linear inequalities

E. Identify coordinates of corner points of feasibility region

F. Find the maximum or minimum value for the function defined over the feasibility region

G. Describe the meaning of the maximum or minimum value

Algebra, Functions and Data Analysis cont'd

II. Calculate probabilities
- A. Compare and contrast permutations and combinations
- B. Calculate permutations
- C. Calculate combinations
- D. Define and give examples of the events including
  1. Complementary
  2. Dependent
  3. Independent
  4. Mutually exclusive
- E. Determine if events in a problem setting are
  1. Complementary
  2. Dependent
  3. Independent
  4. Mutually exclusive
- F. Find conditional probabilities for
  1. Dependent events
  2. Independent events
  3. Mutually exclusive events
- G. Represent and calculate probabilities using Venn diagrams and probability trees
- H. Using theoretical probability within real-world context
  1. Analyze
  2. Interpret
  3. Predict
- I. Determine when to use permutations or combinations in real-world situations

III. Analyze the normal distribution
- A. Given a univariate data set, interpret
  1. Mean
  2. Median
  3. Mode
  4. Range
  5. Interquartile range
  6. Variance
  7. Standard deviation

IV. Explain the influence of outliers

V. Examine standard deviation formula in terms of dispersion

VI. Identify properties of a normal probability distribution

VII. Describe how the graph of the normal distribution is affected by
  1. The mean
  2. The standard deviation

VI. Determine the probability of an event using the normal distribution

Algebra, Functions and Data Analysis cont'd

IX. Design and conduct an experiment/survey
- A. Compare and contrast controlled experiments and observational studies and conclusions drawn from each
- B. Identify biased sampling methods
- C. Select appropriate data collection methods
- D. Investigate and describe sampling techniques such as
  1. Simple random sampling
  2. Stratified sampling
  3. Cluster sampling
- E. Determine appropriate sampling techniques
- F. Plan and conduct an experiment/survey addressing
  1. Control of experimental error
  2. Randomization of experimental error
  3. Minimization of experimental error
- G. Design a survey instrument
- H. Identify bias and ways to reduce bias
- I. Write a report describing the experiment/survey, data, and analysis

Advanced Algebra/Trigonometry

First Nine Weeks

I. Prerequisites: Fundamental Concepts of Algebra
- A. Real numbers and Algebraic Expressions
- B. Exponents
- C. Radicals and Rational Exponents
- D. Polynomials
- E. Factoring Polynomials
- F. Rational Expressions

II. Expressions and Operations
- A. Given rational, radical, or polynomial expressions,
  1. add, subtract, multiply, divide, and simplify rational algebraic expressions;
  2. add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents;
  3. write radical expressions as expressions containing rational exponents and vice versa; and
  4. factor polynomials completely.
- B. Investigate and apply the properties of arithmetic and geometric sequences and series to solve real-world problems, including writing the first *n* terms, finding the *n*th term, and evaluating summation formulas. Notation will include and a_n.
- C. Perform operations on complex numbers, express the results in simplest form using patterns of the powers of *i*, and identify field properties that are valid for the complex numbers.

Advanced Algebra/Trigonometry

III. Equations and Inequalities

A. Solve, algebraically and graphically:

1. absolute value equations and inequalities;
2. quadratic equations over the set of complex numbers;
3. equations containing rational algebraic expressions; and
4. equations containing radical expressions. Graphing calculators will be used for solving and for confirming the algebraic solutions.

B. Solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions.

IV. Functions

A. Recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of these functions**.**

B. Investigate and analyze functions algebraically and graphically. Key concepts include

1. domain and range, including limited and discontinuous domains and ranges;
2. zeros;
3. *x*- and *y*-intercepts;
4. intervals in which a function is increasing or decreasing;
5. asymptotes;
6. end behavior;
7. inverse of a function; and
8. composition of multiple functions. Graphing calculators will be used as a tool to assist in investigation of functions.

C. Investigate and describe the relationships among solutions of an equation, zeros of a function, *x*-intercepts of a graph, and factors of a polynomial expression.

Second Nine Weeks

V. Statistics

A. Collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Mathematical models will include polynomial, exponential, and logarithmic functions.

B. Identify, create, and solve real-world problems involving inverse variation, joint variation, and a combination of direct and inverse variations.

C. Identify properties of a normal distribution and apply those properties to determine probabilities associated with areas under the standard normal curve.

D. Compute and distinguish between permutations and combinations and use technology for applications.

<u>Advanced Algebra/Trigonometry</u> cont'd

VI. Triangular and Circular Trigonometric Functions

A. Given a point, other than the origin, on the terminal side of the angle, will use the definitions of the six trigonometric functions to find the sine, cosine, tangent, cotangent, secant, and cosecant of an angle in standard position. Trigonometric functions defined on the unit circle will be related to trigonometric functions defined in right triangles.

B. Given the value of one trigonometric function, will find the values of the other trigonometric functions, using the definitions and properties of the trigonometric functions.

C. Find, without the aid of a calculator, the values of the trigonometric functions of the special angles and their related angles as found in the unit circle. This will include converting angle measures from radians to degrees and vice versa.

VII. Inverse Trigonometric Functions

A. Find, with the aid of a calculator, the value of any trigonometric function and inverse trigonometric function

VIII. Trigonometric Identities

A. Verify basic trigonometric identities and make substitutions using the basic identities

IX. Trigonometric Equations, Graphs and Practical Problems

A. Given one of the six trigonometric functions in standard form, will

1. State the domain and the range of the function;
2. Determine the amplitude, period, phase shift, and vertical shift, and asymptotes
3. Sketch the graph of the function by using transformations for at least a two-period interval; and
4. investigate the effect of changing the parameters in a trigonometric function on the graph of the function. The graphing calculator will be used to investigate the effect of changing A, B, C, and D on the graph of a trigonometric function

X. Inverse Trigonometric Functions

A. Identify the domain and range of the inverse trigonometric functions and recognize the graphs of these functions. Restrictions on the domains of the inverse trigonometric functions will be included.

XI. Trigonometric Equations, Graphs, and Practical Problems

A. Solve trigonometric equations and include both infinite solutions and restricted domain solutions and solve basic trigonometric inequalities.

B. Identify, create, and solve practical problems involving triangles. Techniques will include using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines.

Computer Mathematics

First Nine Weeks

I. Introduction to Programming
- A. Brief history of Computer Science and computer languages
- B. Computer Architecture – interaction of hardware and software
- C. Control Structures

II. Program Development
- A. Developing algorithms to solve problems
- B. Basics of writing a computer program
- C. Data types and output
- D. Writing comments to document program
- E. Using the compiler to run a program
- F. Developing techniques to test and debug programs

III. Variables and Constants
- A. Writing mathematical expressions into computer statements
- B. Using variables and constants
- C. Input
- D. Using string variables
- E. Using library functions
- F. Determining data type compatibility and type conversion
- D. Program Design
  1. Writing user-defined functions
  2. Parameters
  3. Using functions as subprograms
  4. Recognizing scope of identifiers
  5. Developing programmer-defined libraries
- E. Selection Statements
  1. Boolean expressions
  2. Writing if and if-else statements
  3. Using nested if statements
  4. Writing switch statements
- F. Repetition Statements
  1. Writing for Loops
  2. Writing while Loops
  3. Writing do-while Loops
  4. Using nested loops

Second Nine Weeks

I. Files
- A. Streams and stream processing
- B. Using functions with files
- C. Character input and output
- D. One–dimensional and two-dimensional arrays
- E. Sorting and searching an array

Computer Mathematics cont'd

II. User-Defined Classes
- A. Data structures, data abstraction, and abstract data types
- B. Implementing abstract data types as user-defined classes
- C. Using graphics
- D. Discussing object-oriented programming and software maintenance

III. Searching and Sorting
- A. Binary Search
- B. Quick Sort and Merge Sort

Discrete Mathematics

First Nine Weeks

I. Graphs
- A. Model problems using vertex-edge graphs
- B. Solve problems through investigation and application of
  1. Circuits
  2. Cycles
  3. Euler Paths
  4. Euler Circuits
  5. Hamilton Paths
  6. Hamilton Circuits
- C. Apply graphs to conflict resolution problems
- D. Apply Algorithms relating to trees, networks, and paths

Second Nine Weeks

I. Recursion and Optimization
- A. Use algorithms to schedule tasks in order to determine minimum project time. Algorithms include:
  1. Critical Path Analysis
  2. List-Processing
  3. Student-Created
- B. Solve linear programming problems
  1. Technology will facilitate the use of
     a. Matrices
     b. Graphing Techniques
     c. Simplex Method

II. Election Theory and Fair Division
- A. Analyze and describe the issue of the fair division

Discrete Mathematics cont'd

Third Nine Weeks

I. Election Theory and Fair Division
- A. Analyze and describe the issue of fair division
- B. Investigate and describe weighted voting and results of election methods
  1. Approval and Preference Voting
  2. Plurality
  3. Majority
  4. Run-Off
  5. Sequential Run-Off
  6. Borda Count
  7. Codorcet Winners
- C. Identify Apportionment Inconsistencies

II. Recursion and Optimization
- A. Use the recursive process and difference equations with aid of technology to generate
  1. Compound Interest
  2. Sequences and Series
  3. Fractals
  4. Population Growth Models
  5. Fibonacci Sequence
- B. Describe and apply sorting algorithms and coding algorithms used in
  1. Storing
  2. Processing
  3. Communicating

Fourth Nine Weeks

I. Logic
- A. Select, justify, and apply appropriate technique to solve a logic problem
  Techniques include:
  1. Venn Diagrams
  2. Truth Tables
  3. Matrices

II. Recursion and Optimization
- A. Apply formulas of combinatorics in areas of
  1. The fundamental counting principle
  2. Knap-Sack and bin-packing problems
  3. Permutations and Combinations
  4. Pigeon-Hole Principle

Mathematical Analysis

First Nine Weeks

I. Functions - Characteristics
- A. Combinations of Functions
- B. Inverse Functions
- C. Polynomial Functions of Higher Degree
- D. Rational Functions and Asymptotes
- E. Functions and Their Graphs
- F. Exponential and Logarithmic Functions
- G. Continuity of functions
- H. Operations with matrices

II. Analytical Geometry
- A. Trigonometric Functions: The Unit Circle
- B. Right Triangle Trigonometry and Applications
- C. Solving Trigonometric Equations
- D. Law of Sines
- E. Law of Cosines

Second Nine Weeks

I. Discrete Mathematics
- A. Arithmetic Sequences and Series
- B. Geometric Sequences and Series
- C. Mathematical Induction
- D. Binomial Theorem

II. Parametric and Polar Equations
- A. Parametric Equations
- B. Polar Coordinates and Polar Equations

III. Analytical Geometry
- A. Vectors in the Plane
- B. Conics

IV. Functions
- A. Limits
- B. Introduction to Calculus

AP® Calculus AB

The course syllabus is submitted to the College Board by each AP teacher. The syllabus is available from the AP teacher in each school.

AP® Statistics

The course syllabus is submitted to the College Board by each AP teacher. The syllabus is available from the AP teacher in each school.

College Seminar

First Nine Weeks

I. Expressions and Operations

A. Perform operations on polynomials, including

1. Applying the laws of exponents to perform operations on expressions;
2. Adding, subtracting, multiplying, and dividing polynomials; and
3. Factoring completely first- and second-degree binomials and trinomials in one or two variables. Graphing calculators will be used as a tool for factoring and for confirming algebraic factorizations

B. Express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form

C. Given rational, radical, or polynomial expressions, will

1. Add, subtract, multiply, divide, and simplify rational algebraic expressions;
2. Add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents;
3. Write radical expressions as expressions containing rational exponents and vice versa; and
4. Factor polynomials completely

D. Investigate and apply the properties of arithmetic and geometric sequences and series to solve real- world problems, including writing the first n terms, finding the nth term, and evaluating summation formulas. Notation will include Σ and an99

II. Equations and Inequalities

A. Use matrices to organize data and will add and subtract matrices, multiply matrices, multiply matrices by a scalar, and use matrices to solve systems of equations

B. Solve multistep linear and quadratic equations in two variables, including

1. Solving literal equations (formulas) for a given variable;
2. Justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
3. Solving quadratic equations algebraically and graphically;
4. Solving multistep linear equations algebraically and graphically;
5. Solving systems of two linear equations in two variables algebraically and graphically; and
6. Solving real-world problems involving equations and systems of equations. Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions

C. Graph linear equations and linear inequalities in two variables, including

1. Determining the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined; and
2. Writing the equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line

III. Functions

A. Investigate and analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;

College Seminar cont'd

2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

Second Nine Weeks

I. Functions

A. Investigate and analyze function (linear and quadratic) families and their characteristics both algebraically and graphically, including

1. Determining whether a relation is a function;
2. Domain and range;
3. Zeros of a function;
4. x- and y-intercepts;
5. Finding the values of a function for elements in its domain; and
6. Making connections between and among multiple representations of functions including concrete, verbal, numeric, graphic, and algebraic

II. Expressions and Operations

A. Perform operations on complex numbers, express the results in simplest form using patterns of the powers of i, and identify field properties that are valid for the complex numbers

III. Equations and Inequalities

A. Solve, algebraically and graphically,

1. Absolute value equations and inequalities;
2. Quadratic equations over the set of complex numbers;
3. Equations containing rational algebraic expressions; and
4. Equations containing radical expressions.

Graphing calculators will be used for solving and for confirming the algebraic solutions

B. Solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions

IV. Functions

A. Recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of these functions

B. Investigate and analyze functions algebraically and graphically. Key concepts include

1. Domain and range, including limited and discontinuous domains and ranges;
2. Zeros;
3. x- and y-intercepts;
4. Intervals in which a function is increasing or decreasing;

College Seminar cont'd

5. Asymptotes;
6. End behavior;
7. Inverse of a function; and
8. Composition of multiple functions.

Graphing calculators will be used as a tool to assist in investigation of functions

C. Collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions

D. Collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Mathematical models will include polynomial, exponential, and logarithmic functions

V. Review and Final Exam

MUSIC

Music performance classes (Band, Chorus, and Orchestra) are year-long.

Band – Level I (Beginning)

First Nine Weeks

- Introduction / Selection of Instrument
- Basic Parts of Instruments / Proper Care of Instruments
- Playing Positions / Tone Producing Techniques
- Basic Articulations
- Note Names / Fingerings / Positions
- Musical Terms and Symbols
- Conducting
- Rhythmic Patterns
- Basic Percussion Rudiments
- Three Playing Styles (legato, staccato, and marcato)
- Historic and Stylistic Periods in Western Traditions
- Music Structure
- Concert Preparation / Performance Etiquette
- Performance
- Tuning of Instruments (at the discretion of the teacher)
- Music Careers and Avocations through Music

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Band – Level I (Beginning) cont'd

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest
- B-flat, F, E-flat, and A-flat concert major scales one octave
- Arpeggi for the concert major keys of B-flat, F, E- flat, and A-flat
- Music literature other than that presented in ***Standard of Excellence***, Book I

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Band – Level II (Intermediate)

First Nine Weeks

- Maintenance / Care of Instruments
- Posture
- Tone Production
- Technique
- Conducting
- Ensemble Playing to include Balance, Blend, Intonation, Tuning
- Music Notation to Include Music Terms and Symbols and Performance Application
- Sight Reading and Aural Discrimination
- Multicultural, Interdisciplinary, and Historical Perspectives of Music
- G, D, A, E, B-flat, F, E-flat, and A-flat Major Concert Scales, Two Octaves
- Arpeggi for the Concert Major Keys of B-flat, F, E-flat, A-flat, C, G, D, A, and E, Two Octaves
- Performance Etiquette
- Performance
- Music Careers and Avocations through Music

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student need and interest

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of concepts and technical skills
- Expansion and reinforcement of concepts and technical skills to be determined by student need and interest

Band – Level II (Intermediate) cont'd

- Introduction to Jazz Band (Incorporation of this unit of study and student participation determined by teacher recommendation and student choice)
- Instrument Carriage and Playing Posture
- Tone Production
- Reading Jazz Notation
- Jazz Theory and Harmony to include the Use of Blues and Pentatonic Scales, Chromaticism, and Chord Progressions (Incorporation of this unit of study and student participation determined by teacher recommendation and student choice)
- History of Jazz and Jazz Styles to include Altered and "Blues" Jazz (Incorporation of this unit of study and student participation determined by teacher recommendation and student choice)
- Rhythms, Melodic, and Aural Perception
- Improvisation
- Performance Etiquette
- Performance
- Music Careers and Avocations through Music

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student need and interest.

Band – Level III (Advanced)

Topics Addressed Each Nine Weeks

- Major and chromatic scales and arpeggio
- Tone quality for instruments
- Tuning and intonation in ensemble playing
- Advanced articulation for brass and woodwind players
- Mastery of 26 standard rudiments and individual percussion instrument techniques for percussionists
- Rhythmic, melodic, and aural perception in a band
- Musical form, notation, symbols, and terminology
- Performance and performance etiquette
- Music reflecting multi-cultural, interdisciplinary, and historical perspectives
- Career and avocation opportunities in music
- Marching band, jazz band, and pep band
- Concert and symphonic band

Band – Level IV (Artist)

Topics Addressed Each Nine Weeks

- Major and chromatic scales and arpeggio
- Tone quality for instruments

Band – Level IV (Artist) cont'd

- Tuning and intonation in ensemble playing
- Advanced articulation for brass and woodwind players
- Mastery of 26 standard rudiments and individual percussion instrument techniques for percussionists
- Rhythmic, melodic, and aural perception in a band
- Musical form, notation, symbols, and terminology
- Performances and performance etiquette
- Music reflecting multi-cultural, interdisciplinary, and historical perspectives
- Career and avocation opportunities in music
- Marching band, jazz band, and pep band
- Concert and symphonic band

Chorus – Level I (Beginning)

First Nine Weeks

- The Voice as a Musical Instrument
- Tone Production Techniques
- Vowels and Consonants in Singing
- Posture and Breathing Techniques
- Note Names / Music Notation to include Music Symbols and Terms
- Conducting
- Music Textures
- Rhythmic Patterns
- Ensemble Singing to include Tuning, Intonation, Blend, and Balance
- Sight Reading
- Musical Phrasing
- Musical Style
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Performance
- Performance Etiquette
- Music Careers and Avocations through Music
- Fundamental Piano Keyboard Skills

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Chorus – Level I (Beginning)

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Chorus - Level II (Intermediate)

First Nine Weeks

- The Voice as a Musical Instrument
- Tone Producing Techniques
- Vowels and Consonants in Singing
- Posture and Breathing Techniques
- Music Notation to Include Terms and Symbols
- Conducting
- Music Textures
- Rhythmic Patterns
- Ensemble Singing to include tuning, intonation, balance, and blend
- Musical Style and Interpretation to include phrasing
- Performance
- Performance Etiquette
- Music Careers and Avocations through Music
- Multicultural, Interdisciplinary, and Historic Perspectives of Music

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

<u>Chorus – Level III</u> (Advanced)

Topics Addressed Each Nine Weeks

- The voice as a musical instrument
- Tone producing techniques
- Vowels and consonants in singing
- Posture and breathing techniques
- Note names / music notation / terms / symbols
- Conducting
- Melody and phrasing
- Music textures
- Rhythmic patterns
- Tuning/intonation/blend
- Sight reading
- Musical phrasing
- Musical style
- Performance and performance etiquette
- Music careers and avocations through music

<u>Chorus – Level IV</u> (Artist)

Topics Addressed Each Nine Weeks

- The voice as a musical instrument
- Tone producing techniques
- Vowels and consonants in singing
- Posture and breathing techniques
- Note names/music notation/terms/symbols
- Conducting
- Melody and phrasing
- Music textures
- Rhythmic patterns
- Tuning/intonation/blend
- Sight reading
- Musical phrasing
- Musical style
- Performance and performance etiquette
- Music careers and avocations through music

Orchestra– Level 1 (Beginning)

First Nine Weeks

- Proper Care of Instruments
- Tone Producing Techniques
- Note Names/Fingerings/Playing Positions
- Music Notation to include Musical Terms and Symbols
- Rhythmic Patterns
- Basic Articulations
- Major Scales of Eight Key Signatures
- Minor/Chromatic Scales
- Tuning/Intonation
- Conducting
- Sight Reading
- Musical Phrasing
- Musical Style
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Ensemble Playing to include Balance and Blend
- Performance Etiquette
- Performance
- Career and Avocational Opportunities in Music

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills will be determined by student ability and interest

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of these skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Orchestra – Level II (Intermediate)

First Nine Weeks

- Proper Care of Instruments
- Tone Producing Techniques
- Note Names/Fingerings/Playing Positions
- Music Notation to include Musical Terms and Symbols
- Rhythmic Patterns
- Basic Articulations
- Major Scales of Eight Key Signatures
- Minor/Chromatic Scales
- Tuning/Intonation
- Conducting
- Sight Reading
- Musical Phrasing
- Musical Style
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Ensemble Playing and Performance to include Balance and Blend
- Performance Etiquette
- Performance
- Career and Avocational Opportunities in Music

Second Nine Weeks

- Continuation of study of all material with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills will be determined by student ability and interest

Third Nine Weeks

- Continuation of study of all material with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Fourth Nine Weeks

- Continuation of study of all material with mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

<u>Orchestra – Level III</u> (Advanced)

Topics Addressed Each Nine Weeks

- Proper care of instruments
- Playing positions/tone producing techniques
- Note names/fingerings/positions
- Musical terms and symbols
- Rhythmic patterns
- Basic articulation
- Major scales of eight key signatures
- Minor/chromatic scales
- Tuning/intonation
- Sight reading
- Musical phrasing
- Musical style
- Ensemble playing and performance
- Career and avocations in music

First Nine Weeks

- Proper Care of Instruments
- Tone Producing Techniques
- Note Names/Fingerings/Playing Positions
- Music Notation to include Musical Terms and Symbols
- Rhythmic Patterns
- Basic Articulations
- Major Scales of Eight Key Signatures
- Minor/Chromatic Scales
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Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Orchestra – Level III (Advanced)

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills will be determined by student ability and interest

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of these skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Orchestra – Level IV (Artist)

Topics Addressed Each Nine Weeks

- Proper care of instruments
- Playing positions/tone producing techniques
- Note names/fingerings/positions
- Musical terms and symbols
- Rhythmic patterns
- Basic articulation
- Major scales of eight key signatures
- Minor/chromatic scales
- Tuning/intonation
- Sight reading
- Musical phrasing
- Musical style
- Ensemble playing and performance
- Career and avocations in music

First Nine Weeks

- Proper Care of Instruments
- Tone Producing Techniques
- Note Names/Fingerings/Playing Positions
- Music Notation to include Musical Terms and Symbols
- Rhythmic Patterns
- Basic Articulations
- Major Scales of Eight Key Signatures
- Minor/Chromatic Scales
- Tuning/Intonation
- Conducting
- Sight Reading
- Musical Phrasing
- Musical Style

Orchestra – Level IV (Artist)

- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Ensemble Playing to include Balance and Blend
- Performance Etiquette
- Performance
- Career and Avocational Opportunities in Music

Second Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Third Nine Weeks

- Continuation of study of all material presented with increased mastery of skills and concepts
- Expansion and reinforcement of concepts and technical skills will be determined by student ability and interest

Fourth Nine Weeks

- Continuation of study of all material presented with increased mastery of these skills and concepts
- Expansion and reinforcement of concepts and technical skills to be determined by student ability and interest

Comprehensive Music Level I

Topics Addressed Each Nine Weeks

- Music elements: Pitch, dynamics, timbre, articulation, duration, rhythm, form, melody, tempo
- Kodaly methodology and application
- Music notation and terminology
- Aural skill development: Sight reading and ear training, music dictation, listening, music literature (composer and music composition name identification)
- Harmony and keyboarding
- Music technology
- Music composition

Comprehensive Music Level II

Topics Addressed Each Nine Weeks

I. Theory
- A. Music notation
- B. Keyboard skills
- C. Rhythms (visual and aural identification)
- D. Melody
- E. Intervals
- F. Triads
- G. Major / minor scales: Pentatonic, blues, whole tone scales
- H. Key signatures
- I. Modes
- J. Harmony
- K. Music texture: monophony, homophony, polyphony
- L. 18th century part writing
- M. Music composition
- N. Music form

II. Aural skill development: Sight reading and ear training, music dictation, listening, music literature (composer and music composition name identification)

III. Kodaly methodology and application

Comprehensive Music Level III

Topics Addressed Each Nine Weeks

I. Theory
- A. Music notation
- B. Keyboard skills
- C. Rhythms (visual and aural identification)
- D. Melody
- E. Intervals
- F. Triads
- G. Major / minor scales: Pentatonic, blues, whole tone scales
- H. Key signatures
- I. Modes
- J. Harmony
- K. Music texture: monophony, homophony, polyphony
- L. 18th century part writing
- M. Music composition (20^{th} century composition techniques to include 12-tone row)
- N. Music form

II. Aural skill development: Sight reading and ear training, music dictation, listening, music literature (composer and music composition name identification)

III. Kodaly methodology and application

Comprehensive Music Level IV

Topics Addressed Each Nine Weeks

I. Theory
- A. Music notation
- B. Keyboard skills
- C. Rhythms (visual and aural identification)
- D. Melody
- E. Intervals
- F. Triads
- G. Major / minor scales: Pentatonic, blues, whole tone scales
- H. Key signatures
- I. Modes
- J. Harmony
- K. Music texture: monophony, homophony, polyphony
- L. 18th century part writing
- M. Music composition (20^{th} century composition techniques to include 12-tone row)
- N. Music form

II. Aural skill development: Sight reading and ear training, music dictation, listening, music literature (composer and music composition name identification)

III. Kodaly methodology and application

IV. Music Theory Advanced Placement Examination Preparation

SCIENCE

Biology

First Nine Weeks

I. Scientific Investigation
- A. Formulating and testing hypothesis
- B. Identifying variables and controls
- C. Utilizing appropriate tools and chemicals
- D. Understanding the nature of science

II. Life at the Molecular Level
- A. Macromolecules
- B. Cell Structure and Function
- C. Cell Processes
  1. Osmosis/ Diffusion
  2. Photosynthesis & Cellular Respiration
  3. The Cell Cycle & DNA replication
  4. Mitosis
  5. Meiosis

Biology cont'd

D. Genetics
1. Mendelian Genetics
2. Patterns of Inheritance
3. Genetic technology (karyotyping, DNA testing, cloning etc)

Second Nine Weeks

III. Life at the Systems and Organism Level
A. Earth History
B. Evolution
C. Classification
1. Moneran
2. Protista
3. Fungi
4. Plantae
5. Animalia
D. Human Body Systems

IV. Interactions of Life Forms
A. Ecology
B. Population Ecology
C. Human Impact on Ecology

Advanced Placement Biology

I. Ecology – Animal Behavior
A. Population dynamics
B. Communities and ecosystems
C. Global issues

II. Molecules and Cells
A. Chemistry of Life
1. Water
2. Organic molecules in organisms
3. Free energy changes
4. Enzymes
B. Cells
1. Prokaryotic and eukaryotic cells
2. Membranes
3. Subcellular organization
4. Cell cycle and its regulation
C. Cellular Energetics
1. Coupled reactions
2. Fermentation and cellular respiration
3. Photosynthesis

Advanced Placement Biology cont'd

III. Heredity and Evolution
- A. Heredity
  - 1. Meiosis and gametogenesis
  - 2. Eukaryotic chromosomes
  - 3. Inheritance patterns
- B. Molecular Genetics
  - 1. RNA and DNA structure and function
  - 2. Gene regulation
  - 3. Mutation
  - 4. Viral structure and replication
  - 5. Nucleic acid technology and applications
- C. Evolutionary Biology
  - 1. Early evolution of life
  - 2. Evidence for evolution
  - 3. Mechanisms of evolution

IV. Organisms and Populations
- A. Diversity of Organisms
  - 1. Evolutionary patterns
  - 2. Survey of the diversity of life
  - 3. Phylogenetic classification
  - 4. Evolutionary relationships
- B. Structure and Function of Plants and Animals
  - 1. Structural, physiological, and behavioral adaptations
  - 2. Response to the environment

Biology II: Advanced Survey of Biology Topics in Biotechnology Foundations

First Nine Weeks

I. Exploring Foundations in Biotechnology
- A. Define Biotechnology and Biotechnology Products
- B. Scientific method and laboratory Safety
- C. Biotechnology Careers

II. Exploring Biochemistry
- A. Identify Molecules of Cells
- B. DNA Structure and function
- C. Protein Structure and Function
- D. Enzymes and Enzyme Activity

III. Understanding Bioprocessing
- A. Cellular Organization
- B. Fermentation
- C. Harvesting Protein Product and Quality Control
- D. Product Marketing and Sales

Biology II: Advanced Survey of Biology Topics in Biotechnology Foundations cont'd

IV. Examining Biotechnology's Role in Medicine
- A. Drug Discovery
- B. Protein/Antibody Engineering
- C. Searching for New Products
- D. DNA Synthesis in Vivo
- E. Biodefense or Bioterrorism

Second Nine Weeks

I. Investigating Forensics
- A. DNA Sequencing
- B. Polymerase Chain Reaction (PCR)
- C. Applications of PCR
- D. Protein Studies

II. Understanding Bioengineering / Investigating Genetic Engineering
- A. Sources of DNA
- B. Isolating DNA
- C. Studying DNA using Gel Electrophoresis
- D. Steps in Genetic Engineering
- E. Transforming Cells
- F. After Transformation

III. Examining the Role of Biotechnology in Agriculture
- A. Plant anatomy
- B. Plant Propagation and Breeding
- C. Cloning Plants and Tissue Culture
- D. Biotechnology in Agriculture and Horticulture

IV. Applying Biotechnology to the Environment
- A. Environmental Biotechnology Issues
- B. Biotreatment Systems
- C. Bioremediation
- D. Biorestoration Systems

Chemistry

First Nine Weeks

I. Experimental Analysis and Laboratory Procedures
- A. Safety rules
- B. Emergency procedures
- C. Use of equipment
- D. Experimental procedures
- E. Interpretation of data
- F. Calculating experimental error
- G. Use of computers, calculators and LabQuest units

Chemistry cont'd

II. Measurements and Calculations
- A. Scientific notation
- B. Dimensional analysis/conversions of units
- C. Significant figures

III. Atomic Theory and Structure
- A. Models of the atom
- B. Properties of protons, neutrons, electrons
- C. Atomic number, atomic mass, average mass
- D. Isotopes of elements
- E. Electron energy levels
- F. Absorption and emission of energy by atoms
- G. Valence electrons
- H. Electron energy levels, sublevels, orbitals
- I. Electron configurations

IV. Periodic Table
- A. Metals, nonmetals, semimetals
- B. Formation of ions
- C. Chemical families (groups)
- D. Electron arrangement correlated to groups and periods
- E. Oxidation numbers
- F. Periodic trends

V. Chemical Formulas and Equations
- A. Chemical bonds
- B. Ionic and molecular compounds
- C. Organic and inorganic compounds
- D. Nomenclature
- E. Writing formulas: empirical, molecular, structural, Lewis dot
- F. Molecular Models
  1. Unsaturated and saturated hydrocarbons
  2. Nucleic acids and proteins (biological polymers)
  3. Synthetic polymers
- G. Balancing equations
- H. Interpreting equations
- I. Types of chemical reactions

VI. Stiochiometry
- A. Mole concept; Avogadro's number
- B. Conversions: mass, mole, particle, and volume quantities
- C. Percentage composition
- D. Determining empirical and molecular formulas
- E. Reaction stoichiometric problems

Chemistry cont'd

Second Nine Weeks

I. Phases of Matter/Kinetic Theory
- A. Properties distinguishing solids, liquids, gases
- B. Molecular kinetic theory
- C. Intermolecular Forces
- D. Phase changes
- E. Boiling temperature, vapor pressure
- F. Specific heat capacity
- G. Molar heats of fusion and vaporization
- H. Gas laws

II. Reaction Rates/Chemical Equilibria
- A. Temperature effects
- B. Concentration effects
- C. Surface area effect
- D. Catalyst
- E. Collision model for chemical reactions
- F. Characteristics of chemical equilibrium
- G. Equilibrium constant expressions
- H. LeChatelier's Principle

III. Solutions / Acids and Bases
- A. Molarity
- B. Electrolytes and nonelectrolytes
- C. Ionization and dissociation
- D. Colligative properties
- E. Acid/base theory
- F. Kw, pH, and pOH
- G. Strong versus weak acids/bases
- H. Titrations

Advanced Placement Chemistry

I. Structure of Matter
- A. Atomic theory and atomic structure
  1. Evidence for the atomic theory
  2. Atomic masses
  3. Atomic number and mass number; isotopes
  4. Electron energy levels; atomic spectra, quantum numbers, atomic orbitals
  5. Periodic relationships
- B. Chemical bonding
  1. Binding forces
  2. Molecular models
  3. Geometry of molecules and ions
  4. Nuclear chemistry

Advanced Placement Chemistry cont'd

II. States of Matter
- A. Gases
  - 1. Laws of ideal gases
  - 2. Kinetic-molecular theory
- B. Liquids and solids
  - 1. Kinetic-molecular viewpoint
  - 2. Phase diagrams of one-component systems
  - 3. Changes of state
  - 4. Structure of solids
- C. Solutions
  - 1. Types of solutions and factors affecting solubility
  - 2. Methods of expressing concentrations
  - 3. Raoult's law and colligative properties
  - 4. Non-ideal behavior

III. Reactions
- A. Reaction types
  - 1. Acid-base reactions
  - 2. Precipitation reactions
  - 3. Oxidation-reduction reactions
- B. Stiochiometry
  - 1. Ionic and molecular species
  - 2. Balancing equations
  - 3. Mass and volume relations
- C. Equilibrium
  - 1. Concept of dynamic equilibrium
  - 2. Quantitative treatment
- D. Kinetics
  - 1. Concept of rate of reaction
  - 2. Use of experimental data and graphical analysis
  - 3. Effect of temperature change on rates
  - 4. Energy of activation
  - 5. The relationship between the rate-determining step and a mechanism
- E. Thermodynamics
  - 1. State functions
  - 2. First law
  - 3. Second law
  - 4. Relationship of change in free energy to equilibrium constants and electrode potentials

IV. Descriptive Chemistry
- A. Chemical reactivity and products of chemical reactions
  - 1. Relationships in the periodic table
  - 2. Introduction to organic chemistry

Earth Science I

First Nine Weeks

I. Mapping
- A. Direction and Distance
  1. Legends
  2. Scales
  3. Latitude and Longitude
  4. Projection
  5. Time
- B. Topographic Maps and Landforms
  1. Hills and depressions
  2. River valleys
  3. Profiles
  4. Imagery

II. Astronomy
- A. Earth Moon Systems
  1. Rotation and Revolution
  2. Phases of the Moon
  3. United States Space Programs
  4. Eclipses
  5. Sun Structure
- B. Inner and Outer Planets
  1. Distance – Astronomical Units
  2. Kepler's Laws
     a. Orbital Shapes
     b. Speed of Revolution
     c. Period of Revolution
     d. Comets, Meteors, Asteroids
     e. Physical Features and Measures, Terrestrial vs. Gas Giants
- C. Galaxy and Universe
     a. Origin – Big Bang and Red Shift
     b. Size and Distance - Light Years
     c. Galaxy Classification
     d. Stellar Evolution – Hertzsprung-Russell Diagram

III. Geology
- A. Minerals
  1. Physical Properties
  2. Chemical Properties
  3. Families

Earth Science I cont'd

IV. Rocks
- A. Rock Cycle
  - 1. Processes
  - 2. Products
- B. Igneous Rocks
  - 1. Processes of Formation
  - 2. Environment of Formation
- C. Sedimentary Rocks
  - 1. Processes of Formation
  - 2. Environment of Formation
- D. Metamorphic Rocks
  - 1. Processes of Formation
  - 2. Environment if Formation
- E. Resources of Virginia
  - 1. Rocks and Minerals
  - 2. Provinces of Virginia
- F. Fossils
  - 1. Processes of Formation
  - 2. Index and Trace Fossils
- G. Topographic Maps and Landforms
  - 1. Hills and depressions
  - 2. River valleys
  - 3. Profiles
  - 4. Imagery

V. Geologic Time
- A. Earth's Geologic Timeline
  - 1. Geologic Time in Virginia
- B. Relative Time Principles
  - 1. Uniformitarian's
  - 2. Superposition
  - 3. Cross-Cutting Relationships
  - 4. Fauna/Flora Succession
  - 5. Unconformities
- C. Absolute Time Principles
  - 1. Radioactive Decay of Isotopes
  - 2. Parent/Daughter Decay Relationships
  - 3. Determination of Half-Lives

VI. Tectonic Forces
- A. Earth's Structure
  - 1. Core to Crust (Lithosphere)
  - 2. Pressure and Density Properties
  - 3. Comparative Composition of Earth Materials

Earth Science I cont'd

B. Folding and Faulting
   1. Shear
   2. Compression
   3. Tension

C. Earthquakes
   1. Magnitude and Intensity
   2. Seismic Wave Behavior
   3. Epicenter and Focus Location

D. Tectonic History
   1. Continental Drift
   2. Seafloor spreading
      a. Rifting
      b. Crust Difference
      c. Types of Crust
      d. Age Differences

E. Plate Tectonic Theory
   1. Subduction
   2. Volcanism and Earthquake Relationship

VII. Weathering and Erosion

A. Processes of Soil Development
   1. Horizontal Structure
   2. Moisture Temperature Controls
   3. Measure of Sand/Silt/Clay

B. Karst Topography
   1. Karst Environment
   2. Virginia Valley and Ridge Province
   3. Cave Structures

C. Groundwater
   1. Zonal Structure of Aquifer
      a. Impermeable Layer
      b. Zone of Aeration
      c. Zone of Saturation
      d. Water Table/Capillary Fringe
   2. Flow Controls
      a. Porosity/Permeability
      b. Capillarity
      c. Cone of Depression
      d. Possible Sources of Pollution

D. Freshwater Resources
   1. Resources of Virginia
      a. Surface Water Runoff
      b. Groundwater Aquifer
   2. Watersheds
      a. Structure of Watersheds
      b. Divides of America

Earth Science I cont'd

c. United States Drainage Basins
3. Watersheds of Virginia's
a. Provinces
b. Drainage to Chesapeake Bay
c. Drainage to Other Outlets
4. North Carolina
5. Mississippi Basin

Second Nine Weeks

VIII. Meteorology
A. Atmospheric Structure
1. Composition of Earth's
a. Atmosphere
b. Current Composition
c. Current Structure
2. Temperature Defined Layers
a. Geologic Time Changes
b. Human Influenced Change
c. Ozone Depletion
d. Global Warming
B. Climates
1. Climate Zones
a. Temperate
b. Tropical
2. Factors Affecting Climate
a. Latitude and Insolation
b. Proximity to Water
c. Elevation with Troposphere
d. Position to Mountains
3. Moisture Capacity of the Atmosphere
a. Water Cycle
b. Temperature and Relative Humidity
c. Dew Point
4. Global Winds
a. Pressure Belts
b. Coriolos Effect
c. Global Wind Flow Patterns
C. Weather
1. Synoptic Reporting Data
a. Station Models
2. Air Masses and Source Regions
3. Location of High and Low Pressures
a. Location of Frontal Boundaries, Cloud Development, Weather Pattern Association, Identification of Air Mass Involvement
4. Severe Weather
a. Thunderstorm Development

Earth Science I cont'd

b. Tornado Activity
c. Hurricane Development and Behavior Patterns

IX. Oceanography
A. Physical and Chemical Changes
1. Tides
2. Waves
3. Currents
a. Surface
b. Density Driven
4. Sea Level Change
a. Ice Cap Variation
5. Salinity Variation
B. Economic and Environmental Oceanography
1. Public Policy
a. International
b. National
c. Regional
d. Chesapeake Bay
2. Resources of the Oceans and Chesapeake Bay
C. Physical Oceanography
1. Sea Floor Features
2. Association with Tectonic Processes
D. Ocean System Energy Interaction
1. Weather
2. Climate

Earth Science II: Oceanography

First Nine Weeks

I. Experimental Design: planning and conducting investigations
A. Water quality factors
B. Use of technology
C. Maps, charts, tables, and graphs
D. Manipulating variables

II. History and tools of Oceanography
A. Historical events leading to the science of Oceanography
B. Fields of study in oceanography
C. Tools used in the study of Oceanography

III. Bathymetry and Topography
A. Imagery
B. Topography
C. Bathymetry
D. Latitude and longitude

Earth Science II: Oceanography cont'd

IV. Origin of the Earth and Earth Systems
- A. Cosmology of the Earth
- B. Structure of the Earth
- C. Earth Motions
  1. Day and night
  2. Time zones
  3. Seasons
  4. Climate changes

V. Origins of the Ocean
- A. Postulation of the Plate Tectonics Theory
  1. Continental Drift
  2. Evidence supporting Plate tectonics
- B. Origins of the surface waters
  1. Fresh water
  2. Salt water
- C. Ocean floor structures
- D. Volcanism

VI. Chemistry and Physics of Water
- A. Chemical structure and properties of water
  1. Bonds
  2. Specific heat capacity
  3. Physical characteristics
- B. pH and the Carbon Dioxide-Carbonate Cycle

VII. Marine Sediments
- A. Formation
- B. Classification

VIII. Physical Resources
- A. Minerals and Mining
- B. Power generation

IX. Air-Sea Interaction
- A. Structure of the atmosphere
- B. Energy transfer
- C. Wind patterns
- D. Atmospheric and climatic change
- E. Air-Sea interaction
  1. Land-Sea breezes, monsoons, and rain shadow deserts
  2. El Nino/ La Nino
  3. Tropical storm systems
  4. Extra-tropical storm systems

<u>Earth Science II: Oceanography</u> cont'd

Second Nine Weeks

X. Physical Oceanography
- A. Currents
  - 1. Surface Gyres
    - a. West Boundary currents
    - b. East Boundary currents
  - 2. Density Driven
    - a. Upwelling
    - b. Downwelling
- B. Waves
  - 1. Structure
  - 2. Classification
  - 3. Tsunamis
  - 4. Storm surges
  - 5. Rogue waves

XI. Tides
- A. Types of Tides
- B. Cyclic nature of tides
- C. Importance of tides to marine life

XII. Coastal Oceans
- A. Classification of coastlines
  - 1. Erosional
  - 2. Depositional
- B. Coral Reefs
- C. Human impact

XIII. Estuaries
- A. Classification
- B. Characteristics
- C. Value
- D. Chesapeake Bay and its watershed

XIV. Biological Oceans
- A. Primary productivity
- B. Physical and Biological factors
- C. Limiting factors
- D. Marine Ecosystems
  - 1. Plankton
  - 2. Nekton
  - 3. Benthos

*** Requires the completion of an Honors Project***

Earth Science II: Advanced Survey of Earth Science Topics using Geospatial Technology

Course Description:

Instructional objectives for Geospatial Technology DE are focused upon teaching the student introductory vector to advanced raster geospatial skills. Through the use of scenarios, students will practice the following map making and analysis skills.

Data Access and Management

1. Create a project single tier file structure
2. Connect to a project folder
3. Conduct a data file search
4. Create a thumbnail preview
5. Edit/Create/Update metadata
6. Obtain Coordinate System and Map Projection spatial data
7. Obtain Definitions and Sources for Attributes within a Feature Class
8. Identify the class of a dataset
9. Identify the Source of data within the Table of Contents
10. Access the Attribute Data table of a Feature Class
11. Sort/Summarize/Calculate and Select Values within a Feature Class Attribute Table
12. Add/Join/Delete/Edit values within a Feature Class Attribute Table

Basic Vector Map Manipulation Skills

13. Add a Feature Class Attribute Table to a map layout
14. Manipulate layer Scale Range
15. Rename a Layer
16. Describe the Extent and Data Source for a Feature Class
17. Adjust Display Transparency of a data set
18. Manipulate Symbology attributes by Feature/Category/Quantity or Charts
19. Normalize Symbology attributes
20. Edit/Add/Remove Unique Value within Symbology
21. Adjust or reclassify classification method and classes
22. Adjust the Break Values of a unique value
23. Apply labeling to selected unique value attributes

Mid-Level Map Manipulation Skills

24. Document Map Properties
25. Revise Map Properties Data Source options
26. Create Bookmark views of a map project
27. Access and activate toolbars and extensions
28. Insert multiple data frames
29. Access and edit data frame properties
30. Access within a data frame the label manager and adjust scale ranges
31. Within Layout View, Insert all appropriate map components
32. Export a map as a Joint Photographic Experts Group
33. Display attribute data information by selecting by attribute
34. Display attribute data information by selecting by location
35. Apply a buffer during a location attribute search
36. Clip and export data into the project folder

Earth Science II: Advanced Survey of Earth Science Topics using Geospatial Technology cont'd

Upper-Level Map Manipulation Skills

37. Manipulate raster data sets with the use of the Spatial Analyst Surface Analysis toolbar
38. Perform raster data reclassification with the raster calculator
39. Apply reclassified raster data sets in a statement to generate a new raster layer
40. Clip a raster layer
41. Use an Interpolation Line to generate a profile from a digital elevation model
42. Employ Extract toolset to manipulate a layer data set
43. Employ Proximity toolset to establish single and/or multiple buffering zones
44. Define a projection within the Data Management toolbox
45. Link by Region Grouping raster data cells
46. Calculate the area of a series of grouped cells
47. Geo-reference a feature class data layer to a raster
48. Geo-reference an image data set to a raster data set
49. Rectify a geo-referenced data set.

Physics

First Nine Weeks

I. Introduction
- A. Lab Safety
- B. Math Review
  1. Scientific Notation
  2. Significant Figures
  3. Dimensional Analysis
  4. SI Units and conversion
  5. Measurement
- C. Scientific Theory

II. Linear Motion
- A. Position, Displacement, Velocity, Acceleration
- B. Motion Graphs (d vs. t, v vs. t, a vs. t)

III. Kinematics
- A. Kinematic Equations
- B. Free Fall

IV. Force
- A. Newton's Laws
- B. Friction, Weight
- C. Gravitation
- D. Free body diagrams

Physics cont'd

V. Dynamic Motion
- A. Centripetal Force
- B. Circular Motion
- C. Periodic Motion

VI. Dynamic Motion
- A. Vectors- Graphical addition, trig resolution
- B. Projectile Motion

VII. Conservation Laws
- A. Impulse and Momentum
- B. Collisions
- C. Energy
- D. Energy Transformation
- E. Efficiency
- F. Work and Power

Second Nine Weeks

VIII. Fluids
- A. Pressure
- B. Density
- C. Archimedes Principle
- D. Bernoulli's Principle
- E. Fluids in Motion

IX. Wave Properties
- A. Characteristics (period, wavelength, frequency, amplitude, and phase)
- B. Types of Waves

X. Wave Interactions
- A. Reflection
- B. Refraction
- C. Diffraction
- D. Interference
- E. Polarization
- F. Doppler effect

XI. Light & Sound
- A. Wave models
- B. EM spectrum
- C. Standing Waves

XII. Optics
- A. Ray Model of Light
- B. Ray Diagrams
- C. Mirror and Lens Equations

Physics cont'd

XIII. Field Concept/Electricity & Magnetism
- A. Charge
- B. Coulomb's Law
- C. Motors and generators

XIV. Fields Concept/Electricity & Magnetism
- A. Series, Parallel, and Combined Circuits
- B. Ohm's Law
- C. Circuit Components (resistors, batteries, generators, fuses, switches, and capacitors)

XV. Modern Physics
- A. Wave/Particle Duality
- B. Matter-Energy Equivalence
- C. Quantum Mechanics and Uncertainty
- D. Relativity

XVI. Modern Physics
- A. Nuclear Physics
- B. Solid State Physics
- C. Superconductivity
- D. Radioactivity

SOCIAL STUDIES

Middle School

U.S. History 1865 to the Present

First Semester

I. Geography
- A. Influence of physical features and climate on the westward movement
- B. Relationship among natural resources, transportation, and industrial development
- C. Locating and grouping the 50 states and significant cities

II. Reshaping the nation and the emergence of modern America—Effects of Reconstruction
- A. Reasons for westward expansion
- B. Reasons for immigration, growth of cities, new inventions, and challenges from expansion
- C. Rise of "Jim Crow" and the post Reconstruction South
- D. Rise of big business/industry and life on the farm
- E. Impact of the Progressive Movement
- F. Spanish American War
- G. WWI
- H. Early 20th Century
- I. Causes of WWII
- J. Impact of World War II on the home front

U.S. History 1865 to the Present

Second Semester

I. United States since World War II-Political and Economic Changes
- A. Rebuilding of Europe and Japan, the emergence of the U.S. as a super power, and establishment of the United Nations
- B. Conversion from a wartime to peacetime economy
- C. Cold War, Korean War, Vietnam, Cuban Missile Crisis, collapse of Communism and role of military and veterans
- D. Changing patterns of society for women, men, and minorities
- E. International trade and globalization

II. United States since World War II-social and cultural changes
- A. Civil Rights Movement
- B. Changing role of women
- C. Impact of new technologies on American life
- D. Influential Americans
- E. Key domestic and international issues
- F. Foreign policy and global environment

Civics and Economics

First Semester

I. Foundations of American constitutional government
- A. Fundamental political principles
- B. Influence of earlier documents on the U.S. Constitution
- C. Purposes of the U.S. Constitution
- D. Procedures for amending the Constitution of Virginia and the U.S. Constitution

II. Citizenship and the rights, duties, and responsibilities of citizens
- A. Process by which an individual becomes a U.S. citizen
- B. First Amendment Freedoms
- C. Duties of citizenship
- D. Responsibilities of citizenship
- E. Civic and social duties that address community needs and serve the public good

III. Political process at the local, state, and national levels of government
- A. Functions of political parties
- B. Similarities and differences of political parties
- C. Campaigns for elective office, with emphasis on the role of the media
- D. Role of campaign contributions and costs
- E. Voter registration and participation
- F. Role of the Electoral College in the election of the president and vice president

Civics and Economics cont'd

IV. American constitutional government at the national level
- A. Structure and powers of the national government
- B. Principle of separation of powers and the operation of checks and balances
- C. The lawmaking process
- D. Roles and powers of the executive branch

V. American constitutional government at the state level
- A. Structure and powers of the state government
- B. Relationship of state governments to the federal system
- C. The lawmaking process
- D. Roles and powers of the executive branch and regulatory boards

VI. American Constitutional government at the local level
- A. Structure and powers of the local government
- B. Relationship of local government to the state government
- C. The lawmaking process

VIII. Public Policy at the local, state, and national levels of government
- A. Impact of the media on public opinion and public policy
- B. Influence of individuals and interest groups on public policy
- C. Impact of international issues and events on local decision making

IX. Judicial systems of Virginia and the United States
- A. Organization of the U.S. judicial system (state and federal courts with original and appellate jurisdiction)
- B. Judicial review
- C. Compare and contrast civil and criminal cases
- D. Due process protections

X. Personal Finance and career opportunities
- A. Forms of credit
- B. Savings and investments
- C. Purchases
- D. Contractual agreements
- E. Warranties
- F. Guarantees

Second Semester

I. Economic decisions in the market place
- A. Application of economic concepts
- B. Traditional, free market, command, and mixed economies
- C. Characteristics of the U.S. economy

II. Structure and operation of the U.S. economy
- A. Types of business organizations and role of entrepreneurship
- B. Circular flow and interaction of consumers and producers in the market place
- C. Process of channeling funds from savers to borrowers by financial institutions

Civics and Economics cont'd

D. Relationship of Virginia and the U.S. to the global economy and the impact of technological innovations

III. Role of government in the U.S. economy
A. Competition in the marketplace
B. Goods and services provided by the government
C. Impact of taxation, the 16th Amendment, spending, and borrowing
D. Federal Reserve System
E. Protection of consumer rights and property rights
F. Forms of money created by the government

Grades 9-12

World History and Geography to 1500

First Nine Weeks

I. Paleolithic Era to the Agricultural Revolution

II. Ancient river valley civilizations (chronology, geography social structure, economy, language, religion, and contributions):
A. Egypt
B. Mesopotamia
C. Indus River Valley
D. China
E. Hebrews
F. Phoenicians
G. Kush
H. Persia
I. India
J. China

III. Ancient Greece
A. Geography and social, political, and economic development
B. Mythology and religion
C. Social structure, slavery, and citizenship
D. Athens and Sparta
E. Persian and Peloponnesian Wars
F. Golden Age of Pericles
G. Contributions in drama, poetry, history, sculpture, architecture, science, mathematics, and philosophy
H. Spread of Hellenistic Culture

IV. Ancient Rome
A. Geography and social, political, and economic development
B. Mythology and religion
C. Social structures, role of slavery, democratic features in the Roman Republic

<u>World History and Geography to 1500</u> cont'd

D. Roman domination of the Mediterranean and spread of Roman culture
E. Impact of military conquests
F. Roles of Julius and Augustus Caesar and the rise of imperial Rome
G. Economic, social, and political impact of the Pax Romana
H. Origin, beliefs, and spread of Christianity
I. Development and significance of the Church in the Roman Empire
J. Roman Contributions
K. Reasons for the decline and fall of the Roman Empire

V. Byzantine Empire and Russia
A. Constantinople and the Eastern Roman Empire
B. Justinian and the expansion of the Byzantine Empire
C. Byzantine art and architecture
D. Split between the Roman Catholic Church and the Greek Orthodox Church
E. Impact of Byzantine influence and trade on Russia and Eastern Europe

Second Nine Weeks

I. Islamic civilization
A. Origin, beliefs, traditions, and spread of Islam
B. Influence of geography on Islamic economic, social, and political development and its impact on conquest and trade
C. Historical Islamic turning points
D. Islamic cultural and scientific contributions

II. Western Europe during the Middle Ages
A. Spread and influences of Catholic Church
B. Structure of feudal society
C. Rise of the Frankish kings and revival of the idea of the Roman Empire
D. Invasions, settlements, and influence of migratory groups

III. Civilizations and empires of the Eastern Hemisphere
A. Major trade routes
B. Technological advances and transfers
C. Economic interdependence and cultural interactions
D. Chinese and Japanese cultures and religions
E. Eastern and Western ancient African kingdoms

IV. Civilizations and empires of the Western Hemisphere: Mayan, Aztec, and Incan
A. Climate and geographical features
B. Cultural patterns and political and economic structures

V. Late Medieval Period
A. Emergence of nation- states
B. Crusades, Mongol Conquests, and fall of Constantinople
C. The Black Death

World History and Geography to 1500 cont'd

D. Transfer of Greek, Roman, and Arabic philosophy and contributions to Western Europe

VI. The Renaissance
- A. Economic foundations
- B. Rise of Italian city-states and Machiavelli's theory of governing
- C. Artistic, literary, and philosophical contributions
- D. Comparison of the Italian and Northern Renaissance

World History and Geography 1500 to the Present

First Nine Weeks

I. Political, cultural, and economic conditions in the world about 1500 A.D.
- A. Major states and empires
- B. Artistic, literary, and intellectual ideas of the Renaissance
- C. Distribution of major religions
- D. Major trade patterns
- E. Major technological and scientific exchanges in the Eastern Hemisphere

II. The Reformation
- A. Theological, political, and economic differences
- B. Views and actions of Martin Luther, John Calvin, and Henry VIII
- C. Impact of religious conflicts and the Inquisition
- D. Changing cultural values, traditions, and philosophies

III. European Age of Discovery and expansion into the Americas, Africa, and Asia
- A. Roles of explorers
- B. Influence of religion
- C. Migration, settlement patterns, and cultural diffusion, and social classes in colonized areas
- D. The Columbian Exchange
- E. Triangular trade
- F. Impact of metal exports from the Americas

IV. Impact of global trade on regional civilizations
- A. Ottoman Empire
- B. India and the Mogul Empire
- C. China and Japan
- D. Africa
- E. Commercial Revolution and mercantilism

V. Age of Revolution: 1650 to 1914 A.D.
- A. Scientific Revolution
- B. Age of Absolutism
- C. English Civil War and the Glorious Revolution
- D. The Enlightenment
- E. The French Revolution

World History and Geography 1500 to the Present

F. Impact of the American and French Revolutions on Latin America
G. Expansion of the arts, philosophy, literature, and new technology

VI. Political and philosophical developments in Europe during the 19th century
A. Napoleon and the Congress of Vienna
B. Revolutions and the expansion of political rights in Europe
C. Unification of Italy
D. Unification of Germany

VII. The Industrial Revolution
A. Relationship of scientific, technological, and industrial developments and urbanization
B. Development of capitalism, socialism, and communism
C. Evolution of the nature of work and the labor union movement
D. The link of industrial economies to imperialism and nationalism
E. Competition for resources and responses of colonized peoples

Second Nine Weeks

I. Causes and events of World War I
A. Woodrow Wilson and Kaiser Wilhelm
B. Treaty of Versailles
C. Russian Revolution

II. Interwar Period
A. League of Nations and the mandate system
B. Worldwide depression
C. Dictatorial regimes in the Soviet Union, Germany, Italy, and Japan

III. World War II
A. Economic and political causes and major events
B. Leaders of the war
C. The Holocaust and other examples of genocide
D. The terms of peace
E. War crimes trials
F. Division of Europe
G. Rebuilding of Germany and Japan
H. International cooperative organizations

IV. The Post War Period
A. Cold War between the Soviet Union and the U.S.
B. Impact of nuclear weapons
C. Conflicts and revolutionary movements in eastern Asia

World History and Geography 1500 to the Present cont'd

V. Independence movements and developments
   A. Struggle for self-rule in India, Africa, and the Middle East

VI. Influence of Judaism, Christianity, Islam, Buddhism, and Hinduism in the contemporary World
   A. Beliefs, writings, traditions, and customs
   B. Geographic distribution of religions

VII. Developed and developing nations
   A. Migration of refugees, ethic/religious conflicts, and impact of technology
   B. Economic development, global population growth
   C. Links between economic and political freedom
   D. Economic interdependence, multinational corporations, international organizations, and trade agreements

Citizenship Studies

First Nine Weeks

I. Pre-Assessment, Essential Skills, and Geography

II. Early European settlement and Expansion

III. American Revolutionary Era

IV. Constitutional Era

V. Westward Expansion

VI. Sectionism and Reform Movements

VII. Civil War and Reconstruction Era

VIII. Immigration, Guilded Age, and Progressivism

Second Nine Weeks

IX. Imperialism and World War I

X. Great Depression

XI. World War II

XII. Cold War

XIII. Civil Rights Movement

XIV. Modern Day America

Economics

First Nine Weeks

I. Economic thinking
   A. Scarcity and opportunity cost
   B. Societal economic questions
   C. Factors of production
   D. Free enterprise and socialism

II. Free enterprise system
   A. Circular flow
   B. Profit and loss
   C. Public good and role of government

III. Supply and demand
   A. Laws
   B. Elasticity
   C. Factors related to supply and demand
   D. Equilibrium price

IV. Business and marketplace
   A. Forms of business organizations
   B. Fixed costs, variable costs, and total costs
   C. Law of diminishing returns

V. Market types
   A. Competition, monopoly, monopolistic competition, and oligopoly
   B. Compare/contrast differences
   C. Price and level of output in markets

VI. Labor and unemployment
   A. Employment effect on minimum wage
   B. Impact of labor unions on supply and demand
   C. Economic forces in the workplace
   D. Global competition, technology, and downsizing

VII. Government and the marketplace
   A. Sherman Act
   B. Clayton Act
   C. Federal Trade Commission Act
   D. Robinson- Patman Act
   E. Wheeler-Lea Act
   F. Externalities in the marketplace

VIII. Money and banking
   A. Functions of money
   B. Barter economy
   C. Components of the money supply

Economics cont'd

Second Nine Weeks

I. Federal Reserve System
   A. Structure
   B. Demand deposits
   C. Facilitation of and changes in the money supply

II. Measuring economic performance
   A. Gross Domestic Product (GDP)
   B. Goods and services in the GDP
   C. Real GDP and GDP

III. Taxes, deficits, and debts
   A. Need for taxes
   B. Sources and uses of revenues for the federal government
   C. Progressive, regressive, and proportional taxes

IV. Economic growth
   A. Factors that affect growth
   B. Obstacles to economic growth
   C. Real economic growth vs. per capita real economic growth

V. International trade
   A. Balance of trade
   B. Comparative advantage
   C. Effects of tariffs and quotas

VI. Comparative economic systems
   A. Capitalism and socialism
   B. Problems associated with a change from socialism to free-enterprise

VII. Personal Economic Skills
   A. Rights and responsibilities of consumers
   B. Trade-offs and personal consumer goods
   C. Personal budget
   D. Resume development

Sociology

First Nine Weeks

I. Historical perspectives
   A. Individuals responsible for the development of sociology
   B. Sociology imagination
   C. Relationship of the Age of Enlightenment, industrialization, and urbanization to the development of sociology
   D. Functionalist, conflict, and symbolic inter-actionist perspectives

Sociology cont'd

II. Sociological research
- A. Systematic, descriptive, and explanatory research
- B. Use of the scientific method on societal issues
- C. Independent and dependent variables
- D. Factors of cause and effect
- E. Ethical concerns in sociological research

III. Culture
- A. Components of a society
- B. Characteristics of folkways, mores, and laws
- C. Characteristics of subcultures and countercultures
- D. Types of cultural exchange: invention, discovery, and diffusion
- E. Unifying and destabilizing cultural factors

IV. Socialization
- A. Agents of socialization
- B. Components of human development theory
- C. Freud's view of conflict
- D. Jean Piaget's stages of cognitive development
- E. Stages of life course

V. Social Structure
- A. Ascribed and achieved status
- B. Master status
- C. Role expectation, role conflict, and role strain
- D. Process of role exiting
- E. Primary and secondary groups
- F. Institution and formal organization

VI. Groups and organizations
- A. Aggregates, categories, and groups
- B. Functionalist and conflict perspectives
- C. Research and milgram experiments on group conformity and obedience to authority
- D. Normative, coercive, and utilitarian organizations
- E. Structure of bureaucracies

VII. Deviance
- A. Forms of diviance
- B. Deviant theories
- C. Functions of punishment

VIII. Stratification systems
- A. Open and closed societies
- B. Types of mobility
- C. Types of poverty

Sociology cont'd

Second Nine Weeks

I. Race and ethnicity
   A. Biological and cultural concepts
   B. Prejudice and stereotypes
   C. Assimilation and ethnic pluralism

II. Sex and gender
   A. Characteristics of gender roles
   B. Sexism
   C. Gender stratification

III. Aging
   A. Chronological and functional ages
   B. Life expectancy
   C. Horticultural, pastoral, and agrarian societies

IV. Economy
   A. Economy as a societal institution
   B. Economic systems and historical changes
   C. Capitalism, socialism, and mixed economies

V. Government
   A. Types of authority: authoritarian, democratic, and charismatic
   B. Monarchy
   C. Authoritarianism
   D. Totalitarianism
   E. Democracy

VI. Family
   A. Families of procreation
   B. Families of orientation
   C. Extended and nuclear families
   D. Marriage and cultures

VII. Population and urbanization
   A. Demography
   B. Population growth
   C. Urban areas and related problems

Global Affairs

First Nine Weeks

I. International Law
   A. History of International Law
   B. Principals of International Law
   C. International Courts

Global Affairs cont'd

II. Foreign Affairs
- A. U. S. Constitution and Foreign Policy
- B. U. S. Foreign Policy in the 20th Century
- C. Cold War Foreign Policy
- D. Post Cold War Foreign Policy
- E. Media Influence on Foreign Policy
- F. Public Interest in Foreign Policy

III. Global Economy
- A. The Group of Eight and the Group of Twenty
- B. Developed Nations vs. Developing Nations
- C. GDP/GNP
- D. International Financial Institutions
- E. Free Trade Zones
- F. Global Population

IV. Global Business and Trade
- A. A New Economic Order
- B. Giants of Global Industry and Trade
- C. Asia
- D. Economic Growth and the Quality of Life

V. Human Rights
- A. The Historical Background
- B. Human Rights Organizations
- C. International Human Rights Treaties & Documents
- D. Cultural Impact of Human Rights
- E. Genocide

VI. The Rise of the New Europe
- A. Crisis in Russia
- B. Russia Struggles on
- C. Beyond Russia
- D. Conflict and Change in Eastern Europe
- E. Conflict and Change in Western Europe

VII. Terrorism
- A. The historical Background
- B. Late 20th Century terrorist attacks
- C. Case Studies in Terrorism

Second Nine Weeks

I. Political and Economic Turmoil in Asia
- A. The Modernization of China
- B. Japan: An Economic Superpower
- C. Southeast Asia

Global Affairs cont'd

D. North & South Korea
E. Cultural Impact of Human Rights
F. India's Trouble

II. War and Peace in the Middle East
A. Islam
B. Israel and Arabs
C. The Persian Gulf War
D. The Iraq War
E. Iran
F. Saudi Arabia
G. The Gulf States

III. Africa in Crisis
A. The Congo
B. South Africa
C. Kenya
D. Rwanda
E. Libya
F. Sudan
G. Somalia
H. Zimbabwe

IV. Drugs and Politics in Latin America
A. The United States and the Drug War
B. Turmoil in Venezuela
C. The Caribbean
D. Changes in Brazil
E. Argentina

V. Global Technology and Science
A. Computer Revolution
B. Global Telecommunications
C. Technology of Environmental Protection
D. Health and Medical Technology
E. Transportation Technology
F. Space Exploration

VI. Keeping the Peace
A. History of the United Nations
B. The United Nations After the Cold War
C. Peacekeeping Operations

VII. Global Challenges
A. International Security
B. Alliances and Alignments

Global Affairs cont'd

C. Cyber Warfare
D. Nuclear Proliferation

Advanced Placement US Government

First Nine Weeks

I. Constitutional underpinnings of United States government
   A. Considerations that influenced the formulation and adoption of the Constitution
   B. Separation of Powers
   C. Checks and Balances
   D. Federalism
   E. Theories of democratic government

II. Political beliefs and behaviors
   A. Beliefs that citizens hold about their government and its leaders
   B. Processes by which citizens learn about politics
   C. The nature, sources, and consequences of public opinion
   D. The ways in which citizens vote and otherwise participate in political life
   E. Factors that influence citizens to differ from one another in terms of political beliefs and behaviors

Second Nine Weeks

III. Political Parties, Interest Groups, and Mass Media
   A. Political parties and elections
   B. Interest Groups, including political action committees (PACs)
   C. The mass media
      1. The functions and structures of the news media
      2. The impacts of the news media on politics
      3. The news media industry and its consequences

Third Nine Weeks

IV. Institutions of National Government: The Congress, the Presidency, the Bureaucracy, and the Federal Courts
   A. The major formal and informal institutional arrangements of power
   B. Relationships among these four institutions and varying balances of power
   C. Linkages between institution and political groups

V. Public Policy
   A. Policymaking in a federal system
   B. The formation of policy agendas
   C. The role of institutions in the enactment of policy
   D. The role of the bureaucracy and the courts in the policy implementation and interpretation

Advanced Placement US Government cont'd

Fourth Nine Weeks

VI. Linkages between policy processes and political groups

VII. Civil Rights and Civil Liberties
- A. The development of civil liberties and civil rights by judicial interpretation
- B. Knowledge of substantive rights and liberties
- C. The impact of the Fourteenth Amendment on the constitutional development of rights and liberties

Virginia and United States History

First Nine Weeks

I. Early America: Early Claims, Early Conflicts
- A. European exploration and colonization
- B. New England, Middle, and Southern Colonies
- C. Interactions among Europeans, Africans, and American Indians

II. Values and institutions of European economic and political life in the colonies
- A. Economic, geographic, social, and political characteristics of the three colonial regions
- B. Indentured servitude and slavery

III. Revolution and the new nation
- A. Ideas of John Locke, Thomas Paine, and Thomas Jefferson
- B. Key principles of the Declaration of Independence
- C. Political differences among colonists in regard to separation from England
- D. Resistance to British Rule
- E. Beliefs of Patriots, Loyalists, and Neutrals
- F. Political differences among the colonists
- G. Military factors that contributed to colonial victory

IV. Creation and ratification of the Constitution
- A. Articles of Confederation
- B. Major compromises necessary to create the Constitution
- C. Significance of the Virginia Declaration of Rights and the Virginia Statute for Religious Freedom in the framing of the Bill of Rights
- D. Arguments of Federalists and Anti-Federalists during ratification
- E. Supreme Court as an independent and equal branch of the national government

V. Major events during first half of 19th century
- A. Thomas Jefferson and the first opposition political party
- B. Economic, political, and geographic factors that led to territorial expansion and impact on American Indians
- C. War of 1812
- D. "Age of the common man" (Jacksonian Era)
- E. Cultural, economic, and political issues that divided the nation

<u>Virginia and United States History</u> cont'd

VI. Civil War and Reconstruction Era
- A. Causes of the Civil War
- B. Major events and turning points of the Civil War
- C. Roles of key leaders of the Civil War
- D. Significance of the Emancipation Proclamation
- E. Political effects of the Civil War and Reconstruction
- F. Social impact of the war on African Americans, the common soldier, and the home front
- G. Post-war contributions of key leaders of the Civil War

VII. Reshaping the nation and the emergence of Modern America
- A. Territorial expansion of the U.S. in the late 19th century and early 20th century
- B. Westward movement of the population
- C. New immigration
- D. Growth of cities
- E. Admission of new states
- F. Impact of new inventions/innovations
- G. Transformation of the U.S. economy from an agrarian one to a modern industrial economy
- H. Prejudice and discrimination during this period
- I. "Jim Crow" laws
- J. *Plessy v. Ferguson*
- K. Response of Ida B. Wells, Booker T. Washington, and W.E. B. DuBois to the discrimination and segregation of African-Americans
- L. Working conditions for labor
- M. Impact of the Progressive movement and the Gilded Age on economic opportunities, government regulation, and the elimination of social injustices
- N. Anti-trust laws
- O. Rise of labor unions
- P. Women's suffrage movement

VIII. Emerging role of the U.S. in world affairs and key domestic events after 1890
- A. Changing foreign policy
- B. Influence of the U.S. in foreign markets in Asia and Latin America
- C. U.S. involvement in World War I
- D. President Wilson's Fourteen Points
- E. U.S., British, French, and Italian visions of the postwar world in regard to the Treaty of Versailles and the League of Nations

Second Nine Weeks

I. Key domestic events of the 1920s and 1930s
- A. Impact of radio, movies, newspapers, and magazines on popular culture and traditional values
- B. Causes and consequences of the stock market crash
- C. Causes and impact of the Great Depression
- D. President Roosevelt's New Deal relief, recovery, and reform measures

<u>Virginia and United States History</u> cont'd

II. The World at War: 1939-1945
- A. Causes and events that led to the U.S. involvement in World War II
- B. Responses of the U.S. to totalitarian aggression in Europe and Asia
- C. Cause and effect of America's abandonment of its neutrality policy
- D. Major battles, strategies, and turning points of World War II in North Africa, Europe, and the Pacific
- E. President Truman's decision to use the atomic bomb
- F. Role of all-minority military units
- G. Geneva Convention
- H. Treatment of prisoners of war
- I. The Holocaust
- J. Post war crimes trials

III. Organization, distribution and mobilization of U.S. economic, human, and military resources on the homefront
- A. Contributions of women and minorities during World War II
- B. Internment of Japanese Americans
- C. Role of the media and communication during World War II

IV. United States foreign policy since World War II
- A. Outcomes of World War II: political boundary changes, United Nations, and Marshall Plan
- B. Origins of the Cold War, Truman doctrines, American roles in wars in Korea and Vietnam, and NATO
- C. Role of America's military and veterans during the Cold War
- D. Collapse of Communism and end of Cold War
- E. Impact of U.S. presidents since 1988 on foreign policy

V. Civil Rights movement of the 1950s and 1960s
- A. Importance of *Brown v. Board of Education*
- B. Roles of Thurgood Marshall and Oliver Hill in the *Brown v. Board of Education* decision
- C. Virginia's response to the *Brown v. Board of Education* decision
- D. National Association for the Advancement of Colored People
- E. 1963 March on Washington
- F. Civil Rights Act of 1964
- G. Voting Rights Act of 1965

VI. Economic, social, cultural, and political developments in recent decades and today
- A. Role of U.S. Supreme Court in defining a constitutional right to privacy, affirming equal rights, and upholding the rule of law
- B. Changing patterns of immigration and immigration policy debates
- C. Media influence on American culture
- D. Impact of scientific and technological advances in the workplace, health care, and education
- F. Impact of "Regan Revolution" on federalism, the role of government, and state and

Virginia and United States History cont'd

national elections since 1988
F. Role of government actions that impact the economy
G. Role of the United States in a world confronted by international terrorism

Advanced Placement US History

First Nine Weeks

I. Discovery to Colonial Era
- A. Pre-Columbian Societies
- B. Transatlantic Encounters and Colonial Beginnings 1492-1754
- C. Colonial North American 1690-1754
- D. The American Revolutionary Era 1754-1789
- E. The Early Republic – 1789-1815
- F. Transformation of the Economy and Society in Antebellum America

Second Nine Weeks

II. 19th Century Movement and Evolution of Democracy
- A. The Transformation of Politics in Antebellum America
- B. Religion, Reform and Renaissance in Antebellum America
- C. Territorial Expansion and Manifest Destiny
- D. The Crisis of Union
- E. The Civil War
- F. Reconstruction
- G. The Origins of the New South
- H. Development of the West in the Late 19th Century

Third Nine Weeks

III. Industrialization and Dawn of 20th Century
- A. Industrial America in the late 19th century
- B. Urban Society in the late 19th century
- C. Populism and Progressivism
- D. Emergence of America as a World Power
- E. The New Era – 1920s
- F. The Great Depression and the New Deal
- G. The Second World War
- H. The Home Front during the War

Fourth Nine Weeks

IV. Toward the Modern Era
- A. The United States and the Early Cold War
- B. The 1950s
- C. The turbulent 1960s
- D. Politics and Economics at the end of the 20th century
- E. Society and Culture at the end of the 20th century
- F. The United States in the Post Cold War World

Virginia and United States Government

First Nine Weeks

I. How governments and economies in Mexico, the United Kingdom, and the People's Republic of China compare with the government and economy of the United States
   A. Distribution of government power
   B. Relation between the legislative and executive branches
   C. Comparing the extent of participation in the political process
   D. Comparing the degrees of government involvement in the economies

II. Political philosophies that shaped the development of Virginia and United States constitutional government
   A. Development of Athenian democracy and the Roman republic
   B. Influence of the Magna Carta, the English Petition of Rights, and the English Bill of Rights
   C. The writings of Hobbes, Locke, and Montesquieu
   D. Guarantee of the "Rights of Englishmen" set forth in the Charters of the Virginia company of London
   E. Natural rights philosophies expressed in the Declaration of Independence
   F. George Mason's Virginia Declaration of Rights, Thomas Jefferson's Virginia Statute for Religious Freedom, and James Madison's leadership role in securing adoption of the Bill of Rights by the First Congress

III. Concepts of democracy
   A. Fundamental worth and dignity of the individual
   B. Equality of all citizens under the law
   C. Majority rule and minority rights
   D. Necessity of compromise
   E. Freedom of the individual

IV. Knowledge of the Constitution of the United States
   A. Ratification debates and *The Federalist*
   B. Purposes for government stated in the Preamble
   C. Fundamental principles of the Constitution of the United States
   D. Structure of the national government outlined in Article I, Article II and Article III
   E. Amendment process

V. Federal system described in the Constitution of the United States
   A. Relationship of the state governments to the national government
   B. Sharing of power
   C. Powers denied to state and national governments
   D. Balance of power between state and national governments

VI. Organization and powers of the national government
   A. Legislative, executive, and judicial branches (national level)
   B. Relationship among the three branches in a system of checks and balance (national level)
   C. Ways individuals and groups exert influence on the national government

<u>Virginia and United States Government</u> cont'd

D. Legislative, executive and judicial branches (state level)

VII. Process of making public policy
- A. Different perspectives on the role of government
- B. How the national government influences the public agenda and shapes policy
- C. How state and local governments influence the public agenda and shape public policy
- D. Process by which policy is implemented by the bureaucracy at each level
- E. How individuals, interest groups, and the media influence public policy
- F. Formulating and practicing a course of action to address local and/or state issues

VIII. Operation of the federal judiciary
- A. Organization, jurisdiction, and proceedings of federal courts
- B. Establishment of the Supreme Court as an independent, co-equal branch of government
- C. Supreme Court decision process
- D. Comparison of the philosophies of judicial activism and judicial restraint
- E. How the judiciary influences public policy

IX. Civil liberties and civil rights
- A. Bill of Rights
- B. First Amendment freedoms
- C. Rights of the accused
- D. Due process expressed in the 5^{th} and 14^{th} Amendments
- E. Selective incorporation of the Bill of Rights
- F. Balance between individual liberties and the public interest
- G. Every citizen's right to be treated equally under the law

Second Nine Weeks

I. Powers of the state and local governments described in the Virginia Constitution
- A. Structure and powers of local governments
- B. Relationship between state and local governments and the roles of regional authorities, governing boards, and commissions
- C. How individuals and groups exert influence on state and local governments
- D. Effectiveness of citizen efforts to influence decisions of state and local governments

II. Local, state, and national elections
- A. Organization, role, and constituencies of political parties
- B. Nomination and election process
- C. Campaign funding and spending
- D. Influence of media coverage, campaign advertising, public opinion polls, and Internet-based communications on elections
- E. Impact of reapportionment and redistricting on elections
- F. How amendments extend the right to vote
- G. Voter turnout

Virginia and United States Government cont'd

H. Influence of interest groups on political life
I. Simulations of local, state, and/or national elections

III. Economic systems
A. Basic economic questions
B. Characteristics of traditional, free market, command, and mixed economies
C. Impact of the government's role in the economy on individual economic freedoms
D. Relationship between economic freedom and political freedom
E. Standard of living as measured by key economic indicators

IV. United States market economy
A. Importance of entrepreneurship, the profit motive, and economic independence to economic growth
B. Types of business organizations
C. Factors of production
D. Interaction of supply and demand
E. Circular flow of economic activity
F. Global economic trends and the relationship of Virginia and the United States to the global economy

V. Role of government in the Virginia and United States economies
A. Impact of fiscal and monetary policies on the economy
B. Creation of government-provided goods and services that are not readily produced by the market
C. Environmental issues, property rights, contacts, consumer rights, labor-management relations, and competition in the marketplace
D. Types and purposes of taxation

VI. Role of the United States in a changing world
A. Responsibilities of the national government for foreign policy and national security
B. National interest in shaping foreign policy and promoting world peace
C. Relationship of Virginia and the United States to the global economy
D. Recent foreign policy and international trade initiatives since 1980

World Cultures I Honors (Offered only at Woodrow Wilson High School)

First Nine Weeks

I. Early development of humankind from the Paleolithic Era to the agricultural revolution
A. Impact of geography on hunter-gatherer societies
B. Characteristics of hunter-gatherer societies
C. Technological and social advancements that gave rise to stable communities
D. Effect of archaeological discoveries on present-day knowledge of early peoples

II. Ancient river valley civilizations, including Mesopotamia, Egypt, the Indus River Valley, and China and the civilizations of the Hebrews, Phoenicians, and Nubians
A. Location of these civilizations in time and place
B. Development of social, political, and economic patterns, including slavery

<u>World Cultures I Honors</u> cont'd

C. Development of religious traditions
D. Origins, beliefs, traditions, customs, and spread of Judaism
E. Development of language and writing

III. Civilizations of Persia, India, and China in terms of chronology, geography, and social structure government, economy, religion, and contributions to later civilizations
A. Zoroastrianism and the development of an imperial bureaucracy
B. Aryan migrations and the caste system
C. Origins, beliefs, traditions, customs, and spread of Hinduism
D. Origins, beliefs, traditions, customs, and spread of Buddhism
E. Development of an empire and the construction of the Great Wall
F. Impact of Confucianism, Taoism, and Buddhism

IV. Ancient Greece in terms of its impact on Western civilization
A. Influence of geography on Greek economic, social, and political development, including the impact of Greek commerce and colonies
B. Greek mythology and religion
C. Social structure and role of slavery, the significance of citizenship, the development of democracy, and the city-states of Athens and Sparta
D. Persian and Peloponnesian Wars
E. Athens during the Golden Age of Pericles
F. Cultural contributions
G. Socrates, Plato, and Aristotle
H. Conquest of Greece

V. Ancient Rome from about 700 B.C. (B.C.E.) to 500 A.D. (C.E.) in terms of its impact on Western civilization
A. Influence of geography on Roman economic, social, and political development
B. Roman mythology and religion
C. Social structure and role of slavery, significance of citizenship, and the development of democratic features in the government of the Roman Republic
D. Events leading to Roman military domination of the Mediterranean basin and Western Europe and the spread of Roman culture in these areas
E. Impact of military conquests on the army, economy, and social structure of Rome
F. Roles of Julius and Augustus Caesar in the collapse of the Republic and the rise of imperial monarchs
G. Economic, social, an political impact of the Pax Romana
H. Origin, beliefs, traditions, customs, and spread of Christianity
I. Development and significance of the Church in the late Roman Empire
J. Contributions in art and architecture, technology and science, literature and history, language, religious institutions, and law
K. Decline and fall of the Western Roman Empire

VI. Byzantine Empire and Russia from about 300 to 1000 A.D. (C.E.)
A. Constantinople as the capital of the Eastern Roman Empire
B. Justinian and his contributions, including the codification of Roman law, and describing the expansion of the Byzantine Empire and economy

World Cultures I Honors cont'd

C. Byzantine art and architecture, and the preservation of Greek and Roman traditions
D. Split between the Roman Catholic Church and the Greek Orthodox Church
E. Impact of Byzantine influence and trade on Russia and Eastern Europe

Second Nine Weeks

I. Islamic civilization from 600 to 1000 A.D. (C.E.)
A. Origin, beliefs, traditions, customs, and spread of Islam
B. Influence of geography on Islamic economic, social, and political development
C. Historical turning points that affected the spread and influence of Islamic civilization, with emphasis on the Sunni-Shi'a division , and the Battle of Tours
D. Cultural and scientific contributions and achievements of Islamic civilization
E. Western Europe during the Middle Ages from 500 to 1000 A.D. in terms of its impact on Western civilization
F. Spread and influence of Christianity and the catholic and throughout Europe
G. Structure of feudal society and its economic, social , and political effects
H. Frankish kings, the Age of Charlemagne, and the revival of the idea of the Roman Empire
I. Invasions, settlements, and influence of migratory groups

II. Civilizations and empires of the Eastern Hemisphere and their interactions through regional trade patterns
A. Locations of major trade routes
B. Technological advances and transfers, networks of economic interdependence, and cultural interactions
C. Japan, with emphasis on the impact of Shinto and Buddhist traditions and the influence of Chinese culture
D. East African kingdoms of Axum and Zimbabwe and west African civilizations of Ghana, Mali, and Songhai in terms of geography, society, economy, and religion

III. Major civilizations of the Western Hemisphere, including the Mayan, Aztec, and Incan
A. Geographic relationship on patterns of development in terms of climate and physical features
B. Cultural patterns and political and economic structures

IV. Western Europe during the Middle Ages from about 500 to 1000 A. D.
A. Events related to the spread and influence of Christianity and the Catholic Church throughout Europe
B. Structure of feudal society and its economic, social, and political effects
C. Rise of Frankish kings, the Age of Charlemagne, and the revival of the idea of the Roman Empire
D. Events related to the invasions, settlements, and influence of migratory groups

V. Social, economic, and political changes and cultural achievements in the late medieval period
A. Emergence of nation- states and distinctive political developments in each

World Cultures I Honors cont'd

B. Conflicts among Eurasian powers, including the Crusades, the Mongol conquests, and the fall of Constantinople
C. Crisis and recovery related to the Black Death
D. Preservation and transfer to Western Europe of Greek, Roman, and Arabic philosophy, medicine, and science

VI. Renaissance in Europe in terms of its impact on Western civilization
A. Economic foundations of their Italian Renaissance
B. Rise of Italian city-states
C. Artistic, literary, and philosophical creativity
D. Italian and the Northern Renaissance

World Cultures II Honors

First Nine Weeks

I. Major states and empires
A. Artistic, literary, and intellectual ideas of the Renaissance
B. Major religions
C. Major trade patterns
D. Technological and scientific exchanges in the Eastern Hemisphere

II. The Reformation's impact on Western civilization
A. Theological, political, and economic
B. Religious conflicts
C. Changing cultural values, traditions, and philosophies

III. European Age of Discovery and expansion into the Americas, Africa, and Asia
A. Motivations of explorers and conquistadors
B. Influence of religion
C. Migration, settlement patterns, cultural diffusion, and social classes in colonized areas
D. Columbian Exchange
E. Triangular trade
F. Impact of precious metal exports from the Americas

IV. Global trade after 1500 A.D. (C.E.)
A. Ottoman Empire
B. India, including the Mogul Empire and coastal trade
C. East Asia, including China and the Japanese Shogunate
D. Africa
E. Growth of European nations, Commercial Revolution, and mercantilism

V. Scientific, political, economic, and religious changes during the sixteenth, seventeenth, and eighteenth centuries
A. Scientific Revolution
B. Age of Absolutism
C. English Civil War and the Glorious Revolution

World Cultures II Honors cont'd

D. Political, religious and social ideas of the Enlightenment influences of the founders of the United States
E. French Revolution
F. Expansion of the arts, philosophy, literature, and new technology

VI. Latin American revolutions of the 19th century
A. Colonial system as it existed by 1880
B. Impact of the American and French Revolutions on Latin America
C. Contributions of Toussaint L' Ouverture and Simon Bolivar
D. Monroe Doctrine

VII. Political and philosophical developments in Europe during the nineteenth century
A. Impact of Napoleon and the Congress of Vienna
B. Unsuccessful revolutions on the continent and political reform in Great Britain
C. Explaining events related to the unification of Italy and the role of Italian nationalists
D. Unification of Germany and the role of Bismarck

VIII. The Industrial Revolution
A. Scientific, technological, and industrial developments
B. Emergence of capitalism, socialism, and communism
C. Evolution of the nature of work and the labor force
D. Rise of industrial economics and their link to imperialism and nationalism
E. Impact of European economic and military power on Asia and Africa

Second Nine Weeks

I. World War I
A. Economic and political causes, major events, and major leaders of the war
B. Outcomes and global effect of the war and the Treaty of Versailles
C. Causes and consequences of the Russian Revolution

II. Political, economic, social, and cultural developments during the Interwar Period
A. League of Nations and the mandate system
B. Causes and impact of worldwide depression in the 1930s;
C. Rise, aggression, and human cost of dictatorial regimes in the Soviet Union, Germany, Italy, and Japan, and identifying their major leaders

III. Worldwide impact of World War II
A. Economic and political causes, major events, and identifying leaders of the war;
B. Holocaust and examples of genocide in the twentieth century
C. Terms of the peace, the war crimes trials, the division of Europe, plans to rebuild Germany and Japan, and the creation of international cooperative organizations and the Universal Declaration of Human Rights (1948)

World Cultures II Honors (Ninth –Twelfth Grades)

IV. Major events and outcomes of the Cold War
- A. Key events of the Cold War
- B. Impact of nuclear power on patterns of conflict and cooperation since 1945
- C. Conflicts and revolutionary movements in eastern Asia
- D. Major contributions of selected world leaders in the second half of the twentieth century

V. Political, economic, social, and cultural aspects of independence movements and development efforts
- A. Struggle for self-rule, including Gandhi's leadership in India and the development of India's democracy
- B. Africa's achievement of independence
- C. End of the mandate system and the creation of states in the Middle East

VI. Influence of Judaism, Christianity, Islam, Buddhism, and Hinduism in the Contemporary World
- A. Beliefs, scared writings, traditions, and customs
- B. Geographic distribution of religions in the contemporary world

VII. Cultural, economic, and social conditions in developed and developing nations of the contemporary world
- A. Contemporary political issues
- B. Impact of economic development and global population growth on the environment and society
- C. Economic interdependence
- D. Impact of terrorism

African-American History

First Nine Weeks

I. Ancient African Cultures
- A. Egypt
- B. Kush
- C. Axum

II. Empires of West Africa
- A. Ghana
- B. Mali
- C. Songhai

III. West African Heritage
- A. Families
- B. Religious Practices
- C. Traditions

African-American History cont'd

IV. The Atlantic Slave Trade
- A. Slave raids in West Africa
- B. The Middle Passage
- C. Social, cultural, and economic conditions in West Africa after the slave trade

V. The West Indies
- A. First stop for African slaves
- B. Sugar plantations
- C. Patterns of West Indian slavery

VI. Africans in the Thirteen Colonies
- A. Arrival in Jamestown
- B. Africans in the three colonial regions

VII. Africans in the Revolutionary War
- A. Fighting in the Revolution
- B. Seeking freedom after the Revolution

VIII. The New Constitution
- A. African-Americans organize for freedom
- B. Compromises over slavery

IX. The Role of African-Americans
- A. Illinois Territory
- B. Louisiana Purchase
- C. War of 1812
- D. Florida and the slavery issue
- E. Mountain men
- F. Fur trading
- G. Guides to the West

X. Slavery
- A. Early years
- B. African-Americans in the Cotton Kingdom
- C. Resistance to slavery
- D. Early slave rebellions
- E. The Prosser Conspiracy
- F. The Vesey Conspiracy
- G. Nat Turner
- H. Free African-Americans in the North and South

XI. Abolitionist Movement
- A. Voices for freedom
- B. Reactions to abolitionism
- C. Key leaders
- D. African-American churches as change agents

<u>African-American History</u> cont'd

E. Churches and the anti-slavery battle

XII. Road to the Civil War
A. Challenges to the Fugitive Slave Law
B. The Dred Scott case
C. John Brown's raid

XII. The Civil War and the end of slavery
A. Pressure to free the slaves
B. Role of African-Americans in the Civil War
C. Emancipation Proclamation

Second Nine Weeks

I. Reconstruction
A. Social, economic, religious, political, and educational changes
B. New working conditions
C. Sharecropping system
D. Reconstruction government
E. A loss of African-American rights

II. The westward movement of African-Americans
A. The Gold Rush
B. Exodusters and Sodbusters
C. Cattle drives and cowhands

III. African-Americans in the New South
A. Land of "Jim Crow" and *Plessy v. Ferguson*
B. African-American responses
C. Strong leaders
D. African-American businesses

IV. Advances in education, the arts, and science
A. Public education and higher education
B. Contributions in the arts and science

V. Civil Rights struggle
A. W.E. B. DuBois
B. Booker T. Washington
C. Working and organizing for justice
D. The NAACP (National Association for the Advancement of Colored People)
E. The Great Migration
F. African-American urban culture
G. World War I: opportunities and setbacks
H. Black nationalism
I. The Harlem Renaissance

African-American History cont'd

VI. The Great Depression and the New Deal
- A. New Deal for African-Americans
- B. Gains for African American Workers

VII. The Civil Rights Revolution
- A. African-Americans in the armed forces
- B. On the home-front
- C. A new wave of migration
- D. The arts
- E. Brown v. Board of Education
- F. Civil disobedience
- G. A new generation
- H. Freedom marches, demonstrations, and sit-ins
- I. Voter registration campaigns
- J. Violent responses
- K. Black Power
- L. African-Americans in the Korean and Vietnam War

VIII. African-Americans today
- A. Overcoming economic barriers
- B. A greater voice in politics

Study Skills for World History/Geography to 1500

First Semester

I. Pre-assessment, Essential Skills, and Geography

II. Paleolithic and Neolithic Era

III. Egypt and Mesopotamia

IV. Phoenicians and Hebrews

V. Nubian and Persian Civilizations

VI. Indus River Valley and Indian Civilization and Religions

VII. Classical China and Chinese Civilizations and Religions

VIII. Greek Geography and Mythology

IX. Greek Persian and Peloponnesian Wars

X. Greek Golden Age of Pericles and Greek Contributions

XI. Conquest of Greece, Alexander and the Spread of Hellenistic Culture

Study Skills for World History/Geography to 1500 cont'd

XII. Roman Geography and Mythology

XIII. Roman Domination of the Mediterranean

XIV. Events leading to the fall of the Rome Republic

Second Semester

I. Christianity

II. Pax Romana

III. The Fall of the Roman Empire

IV. The Byzantine Empire

V. Islam

VI. Western Europe during the Middle Ages

VII. Western Europe during the Late Middle Ages

VIII. Regional Trade Patterns

IX. Meso-America

X. The Renaissance

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