Course Syllabi

Grades 7 – 8

Department of Curriculum and Instruction
Revised September, 2008

GRADE 7

ART

Outline of Topics

First Nine Weeks

I. Safety procedures
II. Art career
III. Visual communication
IV. Line variations
V. Shading/value scales
VI. Texture in 2D and 3D
VII. Perspective devices
VIII. Mechanical graphic devices

Second Nine Weeks

I. Contour drawing
II. Proportion
III. Illusion of action in 2D, 3D
IV. Optical Illusions
V. Principles of design
VI. Critique

CAREER & TECHNICAL EDUCATION

Computer Applications

Outline of Topics

I. Keyboarding Review
II. Basic Computer Operations
  A. Load, Access and Exit Software
  B. Memory and Disk Space
  C. Creating Directories
  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 Formula
  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

Education For Employment 1

Outline of Topics

A. Orientation to Education for Employment (one week)
B. Study skills, critical thinking and organizational skill development (two weeks)
C. Grooming/Health habits (two weeks)
D. Communications Skills (two and one half weeks)
E. Decision making (two weeks)
F. Labor laws (one week)
G. Work ethics (one and one half weeks)
H. Self-assessment (two and one half weeks)
I. Career exploration (two weeks)
J. Job seeking skill development (two weeks)

Careers and You

Outline of Topics

I. Understanding Yourself in Relationship to Work
  A. Course Overview
  B. Interest Inventory
II. Exploring Work Styles and Tasks
  A. Introduction to Work Styles
  B. Identify and Stimulate Work Styles Related to the Career Clusters
III. Occupational Exploration
  A. Describe the Career Clusters
  B. Practice Tasks Associated with Selected Careers
IV. Preparing for the World of Work
  A. Identify Avenues of Preparation of Work
  B. Preparation of a Personal Career Portfolio

ENGLISH – Grade 7

Outline of Topics

(These 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. Graphic Organizers
  4. Test-Taking skills
  5. The Writing Process
  6. Mechanics- Basic Capitalization and Punctuation Rules
  7. Review of nouns, pronouns, and verbs
B. Selected Vocabulary
  1. Review homonyms.
  2. Break multi-syllabic words into meaningful roots, prefixes, suffixes, and suffixes. .
  3. Identify connotations.
  4. Recognize analogies, idioms, similes and metaphors.

5. Use context clues to determine meaning.

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

D. Special Projects
1.Oral
2.Written

II. Second Nine Weeks

A. Writing/Grammar/Study Skills
1. Narrative
2. Expository
3. Persuasive
4. Descriptive
5. Usage
a. Verbs
b. Adjectives and Adverbs
6. Agreement of Pronoun and Antecedent
7. Library Skills

B. Literature
1. Narrative Nonfiction
2. Historical Fiction
3. Conflicts
a. Conflict
b. Suspense
c. Foreshadowing
4. Introduction to the Novel
5. Reading Comprehension Strategies

C. Vocabulary
1. Selected Vocabulary
2. Review of roots, prefixes and suffixes

D. Special Projects
1. Oral
2. Written

III. Third Nine Weeks

A. Writing
1. Compositions
a. Narrative
b. Descriptive
2. Subject-verb agreement

B. Literature
1. Elements of Poetry
a. Figures of speech
b. Sentence structure, line length, punctuation, mood and meaning
c. Purpose and theme
2. Elements of Drama
3. Reading Comprehension Strategies

C. Informational Text
a. Fact/ opinion in newspapers, magazines, and other print media
b. Author's viewpoint
c. Persuasive techniques
d. Summary of text

D. Vocabulary
1. Selected Vocabulary
2. Review of roots, prefixes and suffixes

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

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. Short Story and Novel Elements
2. Folktales, Myths and Legends
3. Reading Comprehension Strategies
4. Book report

D. Vocabulary
1. Selected Vocabulary
2. Review of roots, prefixes and suffixes

E. Special Projects
1. Oral
2. Written

Summer Supplementary Reading List
(Revised 2008)

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
***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 grades seven and eight are to make one selection from the recommended list.*

FOREIGN LANGUAGE (EXPLORATORY)

French and Spanish

Outline of Topics

I. 24 Hour Clock
II. Reading a Flight Itinerary
III. Writing a Postcard
IV. Time Zones
V. Customs and Immigration
VI. Greetings and Other Useful Expressions
VII. Completing a Lost Luggage Form
VIII. Snacks
IX. Rooms in a House
X. Furniture and Appliances
XI. Daily Routine
XII. City Attractions and Businesses
XIII. Useful Expressions for Getting Around a Town
XIV. Asking and Giving Directions
XV. Reading a Map
XVI. Post Office Phrases
XVII. Food and Reading Menu
XVIII. Ordering in a Restaurant
XIV. School Courses, Clubs, Schedules, and Supplies
XX. Researching Famous Cities
XXI. Modes of Transportation
XXII. Weather
XXIII. Choosing a Gift
XXIV. Numbers to 1,000,000
XXV. Shopping Expressions
XXVI. Prices
XXVII. Fast Food

GIFTED EDUCATION—THE RENAISSANCE PROGRAM

Outline of Topics

First Nine Weeks

Social Studies—International Studies

- Problem solving skills
- Areas of Concentration: cultural awareness and United Nations

Second Nine Weeks

Math and Science (STEM)

- Hands on experiences and research using the scientific method that focuses on "Experimental Design" Practical applications

Third and Fourth Nine Weeks

Humanities

- Language Arts
- Music
- Visual Arts
- Dance
- Foreign Languages
- History
- Technology
- Culminating project

HEALTH AND PHYSICAL EDUCAITON

Outline of Topics

First Nine Weeks

(Health)

I. Drug Education Awareness
II. Mental Health
III. Disease Prevention

(Physical Education)

IV. Fitness
V. Rope Jumping
VI. Kickball
VII. Flag Football
VIII. Soccer

Second Nine Weeks

(Health)

I. Body systems
II. Nutrition
III. Personal Health and Growth

(Physical Education)

IV. Fitness
V. Rope Jumping
VI. Volleyball

Third Nine Weeks

(Health)

- Interpersonal skills
- Developing a positive self-concept
- Understanding physical and emotional development
- Use of appropriate vocabulary in Family Life Education
- Understanding effects of sexually transmitted diseases
- Child abuse prevention

(Physical Education)

- Fitness
- Rope Jumping

- Basketball

Fourth Nine Weeks

(Health)

- Basic First Aid
- Bleeding
- Breathing
- Bandaging

(Physical Education)

- Fitness (testing)
- Rope Jumping
- Softball

MATHEMATICS

Algebra IA (Middle School)

Outline of Topics

First Nine Weeks

I. Number and Number Sense
   A. Simplify expressions
   B. Find the value of numerical expressions

II. Computation and Estimation
   A. Formulate rules for basic operations with integers
   B. Solve practical problems involving basic operations with integers

III. Expressions and Operations
   A. Identify the base, exponent, and coefficient in a monomial expression
   B. Simplify monomial expressions and ratios of monomial expressions using the laws of exponents
   C. Express numbers, using scientific notation, and perform operations using the laws of exponents
   D. Find the sums and differences of polynomials

IV. Measurement
   A. Compute area and perimeter of polygons
   B. Investigate and solve problems involving the surface area and volume of rectangle prisms and cylinders

V. Benchmark Assessment

Second Nine Weeks

I. Number and Number Sense
   A. Represent a number in fraction, decimal, and percent form
   B. Compare, order, and determine equivalent relationships between fractions, decimals, and percents, including scientific notation

II. Expressions and Operations
   A. Express a square root of a whole number in simplest radical form
   B. Approximate square roots to the nearest tenth
   C. Find the square root of a number using a calculator

III. Computation and Estimation
   A. Write proportions
   B. Solve practical problems using rational numbers and percents

IV. Geometry
   A. Identify corresponding sides and angles of similar figures
   B. Determine whether two figures are similar

V. Probability and Statistics
   A. Determine, investigate, and describe differences between experimental and theoretical probability
   B. Identify and describe possible arrangements of several objects
   C. Use matrices to manipulate and organize data
   D. Collect, analyze, display, and interpret data using the following:
      1. Frequency distribution
      2. Line plot
      3. Histogram
      4. Stem-and-Leaf plot
      5. Box-and-Whisker plot
      6. Scattergram
   E. Compare and contrast multiple one-variable data sets using measures of central tendency and range
   F. Make inferences, conjectures, and predictions based on analysis of a set of data

VI. Benchmark assessment

Third Nine Weeks

I. Patterns, Functions, and Algebra
   A. Represent and analyze patterns in order to investigate and describe functional relationships
   B. Write verbal expressions and equations as algebraic expressions or equations
   C. Apply and identify the following terms: equation, inequality, and expression
   D. Solve one-step equations and inequalities in one variable
   E. Solve practical problems using one-step linear equations

II. Relations and Functions
   A. Analyze a table of ordered pairs for the existence of a pattern
   B. Write a linear equation to represent a pattern in which there is a constant rate of change between variables
   C. Determine whether a relation is a function
   D. Identify the domain and range for a relation
   E. Use physical representations to represent quantitative data

III. Equations and Inequalities
   A. Translate verbal sentences to algebraic equations and inequalities in one variable

B. Solve equations using a variety of properties

IV. Number and Number Sense

A. Identify properties of operations with real numbers

B. Apply properties of real numbers

1. Commutative property
2. Associative property
3. Distributive property
4. Additive and multiplicative identity properties
5. Additive and multiplicative inverse properties
6. Multiplicative property of zero

V. Geometry

A. Identify and graph ordered pairs and label the axes and quadrants of a coordinate plane

B. Compare and contrast quadrilaterals

C. Identify and classify quadrilaterals

VI. Benchmark Assessment

Fourth Nine Weeks

I. Computation and Estimation

A. Review proportions

B. Use proportions to solve practical problems

II. Geometry

A. Represent, identify, and demonstrate transformations

1. Rotations
2. Translations

III. SOL Test Preparation – Grade 7 objectives

IV. SOL Testing – Grade 7 SOL

V. Equations and Inequalities

A. Graph linear equations and inequalities in two variables

B. Apply transformations defined by changes in slope or y-intercept

C. Given a table of values, determine whether a direct variation exists

D. Write an equation for direct variation

E. Graph a direct variation from a table or practical situation

F. Solve multi-step linear equations and inequalities in one variable with

1. Grouping symbols
2. Rational coefficients and constants

G. Apply skills for solving linear equations to practical situations

H. Use the graphing calculator to confirm algebraic solutions to linear equations and inequalities

I. Solve literal equations for a given variable

VI. Relations and Functions

A. Find *f(x)*, for each x in the domain of *f*

B. Identify the zeros of functions algebraically and confirm using the graphing calculator

Algebra I (Middle School)

Outline of Topics

First Nine Weeks

I. Statistics

A. Central Tendency and Range

1. Calculate the measure of central tendency and range for a set of data
2. Compare measures of central tendency using numerical data
3. Compare and contrast two sets of data
4. Compare and analyze two sets of data using a box-and-whisker plot

B. Matrices

1. Represent data from practical problems in matrix form
2. Calculate the sum of difference of two given matrices
3. Calculator the product of a scalar and a matrix
4. Solve practical problems involving matrix addition, subtraction, and scalar multiplication
5. Read and interpret the data in a matrix representing the solution to a practical problem

II. Expressions and Operations

A. Translate verbal expressions into algebraic expressions with three or less terms

B. Relate a polynomial expression with three or less terms to a verbal expression

C. Evaluate algebraic expressions for a given replacement set

D. Apply appropriate computational techniques to evaluate an algebraic expression

E. Identify the base, exponent, and coefficient in a monomial expression

F. Simplify monomial expressions and ratios of monomial expressions using the laws of exponents

G. Express numbers, using scientific notation, and perform operations using the laws of exponents

H. Use algebraic manipulatives to model sums and differences of polynomials

I. Relate concrete and pictorial representations for polynomials operations

J. Find sums and difference of polynomials

K. Estimate a non-perfect square to the nearest tenth by:
    1. Identifying the two perfect squares it lies between
    2. Finding the square root of those two perfect squares
    3. Using those values to estimate the square root of the non-perfect square
L. Find the square root of a number using a calculator
M. Express the square root of a whole number less than 1,000 in simplest radical form

III. Benchmark Assessment

Second Nine Weeks

I. Equations and Inequalities
A. Translate verbal sentences to algebraic equations and inequalities in one variable
B. Solve multi-step linear equations and non-compound inequalities in one variable with:
    1. Variables on both sides of the equation or inequality
    2. Grouping symbols
    3. Rational coefficients and constants
C. Solve literal equations for a specific value
D. Apply skills for solving linear equations to practical situations
E. Use a graphing calculator to confirm algebraic solutions to linear equations and inequalities
F. Simplify expressions and solve equations and inequalities using the order of operations
G. Solve equations using a variety properties
H. Create and interpret pictorial representation for simplifying expressions and solving equations and inequalities
I. Analyze a table of ordered pairs for the existence of a pattern
J. Write a linear equation to represent a pattern in which there is a constant rate of change between variables
K. Determine whether a relation is a function
L. Identify the domain and range for a relation
M. Use physical representations to represent quantitative data
N. Find *f(x)*, for each x in the domain of *f*
O. Identify the zeros of the function algebraically and confirm them using the graphing calculator
P. Given a table of values, determine whether a direct variation exists
Q. Write an equation for a direct variation
R. Graph a direct variation from a table or practical situation
S. Graph linear equations and inequalities in two variables
T. Apply transformations defined by changes in the slope or y-intercept
U. Express linear functions in slope-intercept form
V. Find the slope of a line:
    1. Given an equation in slope-intercept form
    2. Given the graph of the line
    3. Given two points on the line
W. Recognize and describe the slope as a constant rate of change that is positive, negative, zero, or undefined
X. Compare the slopes of graphs of linear functions using the graphing calculator

Third Nine Weeks

I. Equations and Inequalities
A. Recognize the different forms of equations of lines
B. Write an equation of a line
    1. Given the graph of the line
    2. Given two points on the line
    3. Given the slope and a point on the line
C. Line of Best Fit
    1. Write an equation for the line of best fit
    2. Make predictions using the equation of a line of best fit
D. Systems of Equations
    1. Solve systems of equations by graphing
    2. Solve systems of equations by substitution
    3. Solve systems of equations by elimination
    4. Determine the number of solutions
    5. Interpret systems of equations dealing with practical situations

II. Expressions and Operations
A. Use algebraic manipulatives to model products and quotients of polynomials
B. Multiply polynomials by monomials and binomials by binomials symbolically
C. Find the quotient of polynomials using a monomial divisor
D. Use the distributive property to “factor out” all common monomial factors
E. Factor second-degree polynomials and binomials with leading coefficient less than four

F. Identify polynomials that cannot be factored over the set of real numbers
G. Use the x-intercept from the graphical representation of the polynomials to determine and confirm its factors

III. Equations and Inequalities
A. Solve quadratic equations algebraically and graphically
B. Verify algebraic solutions using the graphing calculator (x-intercepts)

Fourth Nine Weeks

IV. SOL Test Preparation
V. SOL Testing
IV. Triangles and the Pythagorean Theorem
A. Classify triangles
B. Solve problems involving sides and angles of triangles
C. Use the Pythagorean Theorem
V. Radical Expressions
A. Simplify rational square roots
B. Identify irrational numbers
C. Simplify square roots
D. Solve radical equations
VI. Distance and Midpoint
A. Use the Pythagorean Theorem to find the distance between points
B. Use the distance and midpoint formulas
VII. Rational Numbers
A. Graph integers on a number line
B. Add and subtract numbers on a number line
C. Find the absolute value of a number
D. Compare numbers
E. Add, subtract, multiply, and divide rational numbers
VIII. Similar Triangles
A. Identify similar triangles
B. Use proportions and properties of similar triangle to solve practical problems

Grade 7 Mathematics

Outline of Topics

First Nine Weeks

I. Number and Number Sense
Simplify expressions
II. Computation and Estimation
A. Formulate rules for basic operations with integers
B. Solve practical problems involving integers
III. Measurement
A. Compute area and perimeter of polygons
B. Investigate and solve problems involving the surface area and volume of rectangular prisms and cylinders
IV. Benchmark Assessment

Second Nine Weeks

I. Number and Number Sense
A. Represent a number in fraction, decimal, and percent forms
B. Compare, order and determine equivalent relationships between fractions, decimals, and percents, including scientific notation
II. Computation and Estimation
A. Use proportions to solve practical problems
B. Solve practical problems using rational numbers and percents
III. Geometry
A. Identify corresponding sides and angles of similar figures
B. Determine whether two figures are similar
IV. Probability and Statistics
A. Determine, investigate, and describe differences between experimental and theoretical probability
B. Identify and describe possible arrangements of several objects
C. Create and solve problems involving measures of central tendency and range
D. Collect, analyze, display, and interpret data using the following
1. Frequency distributions
2. Line plots
3. Histograms
4. Stem-and-Leaf plots
5. Box-and-Whisker plots
6. Scattergrams
E. Make inferences, conjectures, and predictions based on analysis of a set of data
V. Benchmark Assessment

Third Nine Weeks

I. Patterns, Functions, and Algebra
A. Represent and analyze patterns in order to investigate and describe functional relationships
B. Write verbal expressions and equations as algebraic expressions or equations
C. Apply and identify the following terms: equation, inequality, and expression
D. Solve one-step linear equations and inequalities in one variable
E. Solve practical problems using one-step linear equations
II. Number and Number Sense
A. Identify and apply properties of real numbers including
1. Commutative
2. Associative
3. Distributive
4. Additive and Multiplicative Identity

5. Additive and Multiplicative Inverse
6. Multiplicative Property of Zero

III. Geometry
- A. Identify and graph ordered pairs and label the axes and quadrants of the coordinate plane
- B. Compare, contrast, and classify quadrilaterals
- C. Identify and draw polygons to include
  1. Pentagon
  2. Hexagon
  3. Heptagon
  4. Octagon
  5. Nonagon
  6. Decagon

Fourth Nine Weeks

I. Geometry
- A. Determine whether two figures are similar
- B. Represent, identify, and demonstrate transformations
  1. Rotation
  2. Translation

II. SOL Test Preparation

III. SOL Testing

IV. Algebraic Concepts Extension
- A. Vertical Team Lesson – volume
- B. Vertical Team Lesson - area
- C. Vertical Team Lesson – slope
- D. Vertical Team Lesson – speeding ticket investigation
- E. Graphing calculator activities

Mathematical Connections – GRADE 7

Outline of Topics

First Nine Weeks

I. Proportional Reasoning
- A. Represent the relationship that makes a comparison by using the notations $\frac{a}{b}$ a:b, a to b.
- B. Represent relationships by using concrete materials, notations and words (orally and in writing). Relationships will include:
  1. part of set to entire set.
  2. part of one set to corresponding part of another set.
  3. all of one set to all of another set.
  4. part of one set to another part of the same set.
- C. Write a proportion to show two ratios are equivalent.
- D. Solve proportions using equivalent fractions.
- E. Solve proportions algebraically, using cross products.
- F. Solve conversion problems using proportions.
- G. Determine unit price using proportions.
- H. Use proportions to find:
  1. the percent of a number.
  2. the percent one number is of another.
  3. the total when the percent is known.
- I. Use proportions to solve scale model problems. Scale factors will have denominators no greater than 12 and/or decimals no less than tenths.
- J. Determine congruence or non-congruence of polygons according to the measures of their sides and angles.
- K. Use proportions to investigate the relationship between corresponding sides of similar triangles and similar quadrilaterals.
- L. Use proportions to find missing side lengths of similar triangles and similar quadrilaterals.
- M. Identify corresponding sides and corresponding angles of similar figures using concrete models and patty paper.

II. Measurement and Geometry
- A. Determine area and perimeter of geometric figures using concrete materials.
- B. Determine if a problem situation involving triangles and quadrilaterals is the application of perimeter or area.
- C. Solve real-life problems involving area and perimeter of triangles and rectangles. Formulas will be used.
- D. Estimate the area of irregular figures by subdividing the figure into rectangles and right triangles and estimating the area.
- E. Find the area of irregular figures by subdividing the figure into rectangles and right triangles and using area formulas.
- F. Determine the circumference and area of a circle using various tools.
- **G.** Derive an approximation for pi (3.14 or $\frac{22}{7}$) using concrete materials.

Second Nine Weeks

I. Measurement and Geometry
- A. Find the circumference of a circle by using the formula $C=\pi d$ or $C=2\pi r$.
- B. Find the area of a circle using the formula $A=\pi r^2$.

C. Solve real life problems involving finding circumference and area of circles.
D. Identify a three -dimensional model of a prism, cone, cylinder, or pyramid from a two-dimensional representation.
E. Sketch rectangular prisms, cones, cylinders, and pyramids from two-dimensional representations and three-dimensional models.
F. Construct models for rectangular prisms, cones, cylinders, and pyramids using concrete materials.
G. Classify rectangular prisms, cones, cylinders, and pyramids by their two dimensional representations.
H. Build three-dimensional objects from two-dimensional representations.
I. Draw objects from a geometric description.
J. Write a description, including its geometric properties for a given object.

II. Patterns, Functions, and Algebra
A. Translate one-step equations that represent practical problems.
B. State the different uses of variables.
C. Represent and solve one-step equations, using concrete materials.
D. Solve one-step equations by demonstrating the steps algebraically and explaining the steps orally and in writing.
E. Describe the change between terms in numerical patterns.
F. Recognize and describe geometric patterns.
G. Describe verbally, pictorially, and in writing the relationship between consecutive terms in numerical or geometric patterns.
H. Use mathematical relationships or rules to create numerical and geometric patterns.
I. Investigate and describe numerical and geometric patterns of triangular and other polygonal numbers.
J. Represent square numbers as dots in a square array, a growing pattern of squares, grid paper, and calculators.
K. Extend numerical and geometric patterns by describing the change orally and in writing.
L. Identify and define the terms of algebraic expressions and equations.

Algebra IA (Middle School)

Outline of Topics

First Nine Weeks

I. Number and Number Sense
A. Simplify expressions
B. Find the value of numerical expressions

II. Computation and Estimation
D. Formulate rules for basic operations with integers
E. Solve practical problems involving basic operations with integers

III. Expressions and Operations
A. Identify the base, exponent, and coefficient in a monomial expression
B. Simplify monomial expressions and ratios of monomial expressions using the laws of exponents
C. Express numbers, using scientific notation, and perform operations using the laws of exponents
D. Find the sums and differences of polynomials

IV. Measurement
A. Compute area and perimeter of polygons
B. Investigate and solve problems involving the surface area and volume of rectangle prisms and cylinders

V. Benchmark Assessment

Second Nine Weeks

I. Number and Number Sense
A. Represent a number in fraction, decimal, and percent form
B. Compare, order, and determine equivalent relationships between fractions, decimals, and percents, including scientific notation

II. Expressions and Operations
A. Express a square root of a whole number in simplest radical form
B. Approximate square roots to the nearest tenth
C. Find the square root of a number using a calculator

III. Computation and Estimation
A. Write proportions
B. Solve practical problems using rational numbers and percents

IV. Geometry
A. Identify corresponding sides and angles of similar figures
B. Determine whether two figures are similar

V. Probability and Statistics
A. Determine, investigate, and describe differences between experimental and theoretical probability
B. Identify and describe possible arrangements of several objects
C. Use matrices to manipulate and organize data

D. Collect, analyze, display, and interpret data using the following:
1. Frequency distribution
2. Line plot
3. Histogram
4. Stem-and-Leaf plot
5. Box-and-Whisker plot
6. Scattergram

E. Compare and contrast multiple one-variable data sets using measures of central tendency and range

F. Make inferences, conjectures, and predictions based on analysis of a set of data

VI. Benchmark assessment

Third Nine Weeks

I. Patterns, Functions, and Algebra

A. Represent and analyze patterns in order to investigate and describe functional relationships

B. Write verbal expressions and equations as algebraic expressions or equations

C. Apply and identify the following terms: equation, inequality, and expression

D. Solve one-step equations and inequalities in one variable

E. Solve practical problems using one-step linear equations

II. Relations and Functions

A. Analyze a table of ordered pairs for the existence of a pattern

B. Write a linear equation to represent a pattern in which there is a constant rate of change between variables

C. Determine whether a relation is a function

D. Identify the domain and range for a relation

E. Use physical representations to represent quantitative data

III. Equations and Inequalities

A. Translate verbal sentences to algebraic equations and inequalities in one variable

B. Solve equations using a variety of properties

IV. Number and Number Sense

A. Identify properties of operations with real numbers

B. Apply properties of real numbers
1. Commutative property
2. Associative property
3. Distributive property
4. Additive and multiplicative identity properties
5. Additive and multiplicative inverse properties
6. Multiplicative property of zero

V. Geometry

A. Identify and graph ordered pairs and label the axes and quadrants of a coordinate plane

B. Compare and contrast quadrilaterals

C. Identify and draw quadrilaterals

VI. Benchmark Assessment

Fourth Nine Weeks

I. Computation and Estimation

A. Review proportions

B. Use proportions to solve practical problems

II. Geometry

A. Represent, identify, and demonstrate transformations
1. Rotations
2. Translations

III. SOL Test Preparation – Grade 7 objectives

IV. SOL Testing – Grade 7 SOL

V. Equations and Inequalities

A. Graph linear equations and inequalities in two variables

B. Apply transformations defined by changes in slope or y-intercept

C. Given a table of values, determine whether a direct variation exists

D. Write an equation for direct variation

E. Graph a direct variation from a table or practical situation

F. Solve multi-step linear equations and inequalities in one variable with
1. Grouping symbols
2. Rational coefficients and constants

G. Apply skills for solving linear equations to practical situations

H. Use the graphing calculator to confirm algebraic solutions to linear equations and inequalities

I. Solve literal equations for a given variable

VI. Relations and Functions

A. Find f(x), for each x in the domain of f

B. Identify the zeros of functions algebraically and confirm using the graphing calculator

MUSIC

(Performance classes are year-long. General Music offerings are 18-week classes.)

Band – Level I (Beginning)

Outline of Topics

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 during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of the introduced musical and technical skills and concept swill be determined by the needs and interest of the students.)

Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of the introduced musical and technical skills and concepts will be determined by the needs and interest of the students.)

- 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 other than that presented in **Standard of Excellence**, Book I

Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of the introduced musical and technical skills and concepts will be determined by the needs and interest of the students.)

Chorus – Level I

Outline of Topics

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

Second Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interest of the students.)

- Multicultural, Interdisciplinary, and Historic

Orchestra– Level 1 (Beginning)

Outline of Topics

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 during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of the introduced musical and technical skills and concepts will be determined by the needs and interests of the students.)

Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

Strings – Level 1 (Beginning)

Outline of Topics

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 during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of the introduced musical and technical skills and concepts will be determined by the needs and interests of the students.)

Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

General Music

Outline of Topics

General Music A

- Fundamental Music Elements: Rhythm, Melody, Tone Color, Texture/Harmony, Form
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Performance Etiquette
- Performance
- Music Careers and Avocations through Music

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

General Music B: Making Music Instruments

- Fundamental Music Elements: Rhythm, Melody, Tone Color, Texture/Harmony, Form
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Use of research and technology skills to design and make playable music instruments
- Performance Etiquette
- Performance
- Music Careers and Avocations through Music

(The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

Science (Life Science)

Outline of Topics

First Nine Weeks

I. Basic Needs of Organisms
   A. Plant needs
   B. Animal needs
   C. Life processes

II. Photosynthesis
   A. Importance of sunlight and chlorophyll
   B. How photosynthesis occurs
   C. Importance of photosynthesis

III. Cells
   A. Cell structure and organelles
   B. Comparison of plant and animal cells
   C. Cell theory
   D. Cell division

1. Mitosis
2. Meiosis

Second Nine Weeks

I. Cellular Organization
- A. Cells, tissues, organs, systems
- B. Life functions and processes

II. Classification of Organisms
- A. Characteristics of kingdoms
- B. Major plant and animal phyla
- C. Characteristics of species

Third Nine Weeks

I. Environmental Ecosystems
- A. Carbon, water, and nitrogen cycles
- B. Flow of energy and matter throughout ecosystems
- C. Complex relationships in terrestrial, freshwater, and marine ecosystems
- D. Food chains, food webs, and food pyramids

II. Interactions Among Populations of Organisms
- A. Competition, cooperation, social hierarchy, territorial imperative
- B. Behavior

III. Interactions in a Biological Community
- A. Producers, consumers, decomposers
- B. Predator/prey relationships
- C. Competition vs. cooperation
- D. Symbiotic relationships
- E. Niches

IV. Genetics
- A. Role of DNA
- B. Function of genes and chromosomes
- C. Genotypes and phenotypes
- D. Expression of traits
- E. Inheritance
- F. Genetic engineering and its applications
- G. Historical contributions and significance of discoveries in genetics

Fourth Nine Weeks

I. Changes in Organisms over Time
- A. Mutation, adaptation, natural selection, and extinction
- B. The fossil record
- C. Diversity and the environment

II. Biotic and Abiotic Factors in the Ecosystem
- A. Ecosystems and biomes
- B. Land, marine, and freshwater ecosystems
- C. Adaptations for survival

III. Changes in Ecosystems
- A. Phototropism, hibernation, and dormancy
- B. Factors that affect population size
- C. Eutrophication, climate change, catastrophic disturbances

IV. Ecosystems and Human Activity
- A. Food production and harvest
- B. Changes in habitats
- C. Changes in species competition
- D. Population disturbances
- E. Environmental issues

Advanced Science 7

Course Syllabus

First Nine Weeks

I. Matter
- A. Properties of Matter
- B. Structure of the Atom
- C. Periodic Table
- D. Chemical Bonds

Second Nine Weeks

II. Population dynamics
- A. Cell Structure and Function
- B. Photosynthesis
- C. Cell Division
- D. DNA and Heredity

Third Nine Weeks

III. Evidence of Change/Genetics
- A. Evolution and Genetic Variation
- B. Classification
- C. Ecology

Fourth Nine Weeks

IV. Force, Motion, Electricity, and Magnetism
- A. Review Properties of Matter
- B. Heat Transfer
- C. Energy
- D. Sound and Light
- E. Force and Motion
- F. Electricity and Magnetism

SOCIAL STUDIES

U.S. History 1877 to the Present

Outline of Topics

First Nine Weeks

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
- 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

Second Nine Weeks

I. Turmoil and Change: 1890s to 1945
A. Reasons and results of the Spanish American War
B. U.S. involvement in World War I
C. Impact of developments in transportation, communication, and electrification on American life.
D. Social Changes created by Prohibition and the Great Migration
E. Art, Music, and literature of the Harlem Renaissance
F. Causes and impact of the Great Depression
G. Causes and effects of World War II
H. Major events and turning points of World War II

Third Nine Weeks

I Turmoil and change: 1890s to 1945
A. Impact of World War II on the home front

II. United States since World War II
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, and collapse of Communism
D. Changing patterns of society for women, men, and minorities

III. Turmoil and change: 1890s to 1945
A. Changing patterns of society for women, men, and minorities

IV. The United States since World War II
A. Civil Rights Movement
B. Changing role of women
C. Impact of new technologies on American life

Review for SOL Test

GRADE 8

ART

Outline of Topics

First Nine Weeks

8.7 Appropriate terminology
8.1 Critiquing
8.11 Safety
8.6 Principles of design
8.3 Line to create light and shade
8.13 Display techniques
8.10 Use of elements to create mood
8.18 Color scheme, use of color, value, intensity

Second Nine Weeks

8.12 Expressionistic vs. naturalistic
8.5 Color to create depth
8.15 Implied line
8.4 One and two-point perspective
8.9 Lettering as a graphic art
8.14 Differentiate between 2D, 3D, and multi-dimensional art forms in video
8.17 Major artists: styles, media, period

CAREER & TECHNICAL EDUCATION

Computer Applications

Outline of Topics

A. Keyboarding Review
B. Basic computer operations
C. Word processing
D. Databases
E. Spreadsheets
F. Graphics
G. Security and maintenance

Education For Employment I

Outline of Topics

A. Orientation to EFE
B. Study Skills, critical thinking, organizational skill development
C. Grooming/health habits
D. Communications skills
E. Decision making
F. Labor laws
G. Work ethics
H. Self-assessment
I. Career exploration
J. Job seeking skills development

ENGLISH – Grade 8

Outline of Topics

(These 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"
e. "Raymond's Run"
f. "The Drummer Boy of Shiloh"
f. "A Ribbon for Baldy
g. "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 and 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.

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)
3. 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

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
(Revised 2008)

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
***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 grades seven and eight are to make one selection from the recommended list.*

FOREIGN LANGUAGE

French I

Outline of Topics

First Nine Weeks

- Greetings and salutations formally and informally
- Identify a person
- Identify common classroom objects
- Describe location of people and things
- Recognize numbers 1 to 60
- Ask how much something costs
- Order food and drink at a café
- Use polite expressions
- Ask or tell where someone is from (singular forms of *être*)
- Ask what someone is like (adjective agreement)
- Compare French and American schools
- Describe oneself (adjective agreement)
- Describe and identify people and things (singular definite and indefinite articles)
- Use negation (*ne…pas*)
- Locate some French cities and geographical features
- Describe people and things related to school (plural forms of *être)*
- Tell what subjects students take and give some opinions about them
- Use the days of the week to discuss activities
- Talk about more than one person or thing (agreement of adjectives in the plural)
- Ask "yes/no" questions (using intonation or *est-ce que*)
- Speak formally and informally (the difference between *tu* and *vous*)
- Tell time and say at what time activities occur
- Recognize time using the 24-hour clock
- Talk about Paris suburbs and small towns in France
- Recognize two French artists, Monet and Gauguin

Second Nine Weeks

- Talk about what students do in school and after schools (verbs ending in *–er*)
- Talk about people in general (the pronoun *on*)
- Describe people's activities (indefinite articles in the plural)
- Express "some" and "not any" (negation with indefinite articles)
- Talk about what students like to do and don't like to do (conjugated verbs followed by the infinitive)
- Improve pronunciation of vowel sounds
- Compare school life in France to school life in the U.S.
- Learn more about the history of Paris
- Talk about students' families (family relationships)
- Give dates (How to express today's date)
- Talk about what they and others have (*avoir* in the present tense)
- Tell people's ages (*avoir* expression)
- Tell what belongs to students and to others (*avoir* in the present tense)
- Use certain adjectives to describe people and things (common irregular adjectives)
- Talk about possessions (possessive adjectives)
- Pronounce nasal vowel sounds
- Compare French and American families and living accommodations

Third Nine Weeks

- Order food or a beverage at a café or restaurant (*avoir faim, avoir soif*)
- Identify eating utensils and some foods
- Tell and ask where people are going (the present indicative forms of *aller*)
- Ask for the check
- Give telephone numbers and locations
- Ask how someone is
- Tell what students and others are going to do (the *future proche*)
- Tell what belongs to students and to others (contractions of the prepositions *a* and *de* with the definite articles)
- Pronounce the "r" sound
- Compare dining in France and in America
- Possessive adjectives *notre, votre,* and *leur*
- Shop for food in a French-speaking country (Basic food vocabulary and the names of some important food categories)
- Ask for the quantity you want (the partitive in the affirmative)
- Find out prices (numbers 101-1,000)

- Talk about an indefinite quantity (the partitive)
- Talk about things in general
- Tell what people don't have or don't do (present indicative forms of *faire*)
- Tell what you want to do and invite someone to do something (present indicative forms of *vouloir*)
- Tell things you are able to do or unable to do (present indicative forms of *pouvoir*)
- Pronounce /œ/ vowel sounds
- Compare and contrast French and American shopping habits (vocabulary associated with various types of shops common in France)

Fourth Nine Weeks

- Check in for a flight (vocabulary associated with airport check-in and flight boarding)
- Talk about some services on board the plane (vocabulary associated with services and procedures on board a flight)
- Get through the airport after deplaning (vocabulary associated with procedures at the destination)
- Describe people's activities (present indicative forms of regular –*ir* verbs)
- Present indicative forms of the verbs with *dormir, partir,* and *sortir*)
- Express "which" and "all" (all forms of the adjectives *quel* and *tout*)
- Describe people and things (all forms of adjectives and nouns ending in –*al*)
- Practice pronunciation of final /l/ sound
- Describe air travel in France
- Use words and expressions related to train travel (vocabulary associated with facilities, personnel, and procedures at a railway station and on board a train)
- Describe people's activities (present indicative forms of –*re* verbs)
- Point out people or things (all forms of the demonstrative adjectives)
- The present indicative of the verb *mettre*
- Pronounce French vowel sounds
- Read for comprehension
- Compare train travel in France and in the U.S.

Spanish I

Outline of Topics

First Nine Weeks

Etapa Preliminar

- Greet people
- Introduce oneself
- Say where one is from

Unidad 1

Etapa 1

- Familiar and formal greetings
- Introduce others (Subject pronouns and ser)
- Ask or tell where someone is from (ser + de)
- Express likes (*gustar* + infinitive: *me, te, le*)

Etapa 2

- Describe others (Definite and indefinite articles, professions)
- Give others' likes and dislikes (*gustar* + infinitive)
- Describe clothing (noun-adjective agreement, gender, number)
- Cultural notes: San Antonio

Second Nine Weeks

Unidad 1

Etapa 3

- Describe family (*Tener*)
- Ask and tell ages (Possession using *de*)
- Talk about birthdays (Possessive adjectives)
- Give dates
- Express possession *(¿De quién es. . .?, Es de. . .; ¿Quién es? ¿Quiénes son? hay)*
- Notas Culturales:
  - The oldest house in L.A.
  - Street names
  - Writing the date

Unidad 2

Etapa 1

- Describe classes and classroom objects
- Say how often one does something (present tense of regular –*ar* verbs)
- Discuss obligations using *tener que, hay que*
- *Universidad Autónomo de México*

Third Nine Weeks

Unidad 2

Etapa 2

- Talk about schedules (verb *ir*)
- Ask and tell time
- Ask questions (*estar* + location)
- Say where you are going (interrogative words)
- Request food
- Mexican school schedules

Etapa 3

- Discuss plans (*ir a* + infinitive)
- Sequence events (Present tense –*er* and –*ir* verbs)
- Talk about places and people you know (Irregular *yo* forms; *hacer, conocer,* personal *a, oir*)
- *Museo Nacional de Antropologia*

Fourth Nine Weeks

Unidad 3

Etapa 1

- Extend invitations (*Estar* + adjectives)
- Talk on the phone
- Express feelings
- Say where ;you are coming from (*Venir*)
- Say what just happened (*Acabar* de + infinitive)

Etapa 2

- Talk about sports *(Jugar)*
- Express preferences (Stem-changing verbs: *e>ie*)
- Say what you know *(Saber)*
- Make comparisons (Comparatives)

Etapa 3

- Describe the weather (Weather expressions)
- discus clothing and accessories (Direct object pronouns)
- State an opinion
- Describe how you feel (*Tener* expressions)
- Say what is happening (Present progressive)

HEALTH AND PHYSICAL EDUCATION

Outline of Topics

I. First Nine Weeks

(Health)

A. Mental health
B. Body systems
C. Personal growth

(Physical Education)

D. Fitness
E. Rope jumping
F. Flag football

II. Second Nine Weeks

(Health)

A. Nutrition
B. First aid
C. Disease prevention

(Physical Education)

D. Fitness
E. Volleyball
F. Table Tennis

III. Third Nine Weeks

(Health)

A. Developing effective understanding skills
B. Appreciating the worth of all persons
C. Use appropriate vocabulary in Family Life Education
D. Develop wholesome attitudes toward his/her own sexuality

(Physical Education)

A. Fitness
B. Basketball
C. Kickball

IV. Fourth Nine Weeks

(Health)

A. Developing self-esteem
B. Alcohol and tobacco prevention
C. First aid

(Physical Education Testing)

D. Rope jumping
E. Softball
F. Track and field

MATHEMATICS

Grade 8 Mathematics

Outline of Topics

First Nine Weeks

I. Number and Number Sense
   A. Simplify numerical expressions
   B. Recognize, represent, compare, and order decimals, fractions, percents, and numbers written in scientific notation
   C. Identify the subsets of the real number system
   D. Describe and illustrate subsets of the real number system

II. Computation and Estimation
   A. Solve practical problems involving rational numbers
   B. Solve problems involving discounts
   C. Maintain a checkbook register
   D. Simplify algebraic expressions
   E. Evaluate formulas using the order of operations
   F. Identify perfect square numbers
   G. Find the two consecutive whole numbers between which the square root lies
   H. Determine the square root of a number

III. Measurement
   A. Verify and describe relationships between
      1. Vertical angles
      2. Supplementary angles
      3. Complementary angles
   B. Investigate and solve practical problems involving volume and surface area of
      1. Rectangular solids (prisms)
      2. Cylinders
      3. Cones
      4. Pyramids

IV. Patterns, Functions, and Algebra
   A. Create problems involving proportions
   B. Solve problems involving proportions
   C. Create problems involving formulas
   D. Solve problems involving formulas
   E. Create problems involving functions
   F. Solve problems involving functions

V. Benchmark Assessment

Second Nine Weeks

I. Geometry
   A. Identify and demonstrate transformations (rotate, reflect, translate, and dilate) to geometric figures on graph paper
   B. Construct three-dimensional models
   C. Verify the Pythagorean Theorem
   D. Determine the missing length of a side of a right triangle

II. Probability and Statistics
   A. Make comparisons, predictions, and inferences based on knowledge of probability
   B. Compare, predict, and infer using information from
      1. Frequency distributions
      2. Box-and-Whisker plots
      3. Scattergrams
      4. Line graph
      5. Bar graph
      6. Circle graph
      7. Picture graph
      8. Histogram
   C. Use a matrix to organize and describe data

III. Benchmark Assessment

Third Nine Weeks

I. Patterns, Functions, and Algebra
   A. Describe, represent, relate, and compare relations and functions using

1. Tables
2. Graphs
3. Rules

II. Create and solve problems involving functions
III. Solve two-step linear equations
IV. Solve two-step linear inequalities
V. Graph linear equations
VI. Use algebraic terms appropriately
A. Domain
B. Range
C. Independent variable
D. Dependent variable
VII. Benchmark Assessment

Fourth Nine Weeks

I. SOL Test Preparation
II. SOL Testing
III. Algebraic Concepts Extensions
A. Vertical Team Lesson – volume
B. Vertical Team Lesson – area
C. Vertical Team Lesson – slope
D. Vertical Team Lesson – speeding ticket investigation
E. Graphing calculator activities

Algebra I (Middle School)

Outline of Topics

First Nine Weeks

I. Statistics
A. Central Tendency and Range
1. Calculate the measure of central tendency and range for a set of data
2. Compare measures of central tendency using numerical data
3. Compare and contrast two sets of data
4. Compare and analyze two sets of data using a box-and-whisker plot

B. Matrices
1. Represent data from practical problems in matrix form
2. Calculate the sum of difference of two given matrices
3. Calculator the product of a scalar and a matrix
4. Solve practical problems involving matrix addition, subtraction, and scalar multiplication
5. Read and interpret the data in a matrix representing the solution to a practical problem

II. Expressions and Operations
A. Translate verbal expressions into algebraic expressions with three or less terms
B. Relate a polynomial expression with three or less terms to a verbal expression
C. Evaluate algebraic expressions for a given replacement set
D. Apply appropriate computational techniques to evaluate an algebraic expression
E. Identify the base, exponent, and coefficient in a monomial expression
F. Simplify monomial expressions and ratios of monomial expressions using the laws of exponents
G. Express numbers, using scientific notation, and perform operations using the laws of exponents
H. Use algebraic manipulatives to model sums and differences of polynomials
I. Relate concrete and pictorial representations for polynomials operations
J. Find sums and difference of polynomials
K. Estimate a non-perfect square to the nearest tenth by:
1. Identifying the two perfect squares it lies between
2. Finding the square root of those two perfect squares
3. Using those values to estimate the square root of the non-perfect square

L. Find the square root of a number using a calculator
M. Express the square root of a whole number less than 1,000 in simplest radical form

III. Benchmark Assessment

Second Nine Weeks

I. Equations and Inequalities
A. Translate verbal sentences to algebraic equations and inequalities in one variable
B. Solve multi-step linear equations and non-compound inequalities in one variable with:
1. Variables on both sides of the equation or inequality
2. Grouping symbols
3. Rational coefficients and constants

C. Solve literal equations for a specific value
D. Apply skills for solving linear equations to practical situations
E. Use a graphing calculator to confirm algebraic solutions to linear equations and inequalities

F. Simplify expressions and solve equations and inequalities using the order of operations
G. Solve equations using a variety properties
H. Create and interpret pictorial representation for simplifying expressions and solving equations and inequalities
I. Analyze a table of ordered pairs for the existence of a pattern
J. Write a linear equation to represent a pattern in which there is a constant rate of change between variables
K. Determine whether a relation is a function
L. Identify the domain and range for a relation
M. Use physical representations to represent quantitative data
N. Find *f(x)*, for each x in the domain of *f*
O. Identify the zeros of the function algebraically and confirm them using the graphing calculator
P. Given a table of values, determine whether a direct variation exists
Q. Write an equation for a direct variation
R. Graph a direct variation from a table or practical situation
S. Graph linear equations and inequalities in two variables
T. Apply transformations defined by changes in the slope or y-intercept
U. Express linear functions in slope-intercept form
V. Find the slope of a line:
1. Given an equation in slope-intercept form
2. Given the graph of the line
3. Given two points on the line
Y. Recognize and describe the slope as a constant rate of change that is positive, negative, zero, or undefined
Z. Compare the slopes of graphs of linear functions using the graphing calculator

Third Nine Weeks

I. Equations and Inequalities
A. Recognize the different forms of equations of lines
B. Write an equation of a line
1. Given the graph of the line
2. Given two points on the line
3. Given the slope and a point on the line
C. Line of Best Fit
1. Write an equation for the line of best fit
2. Make predictions using the equation of a line of best fit
D. Systems of Equations
1. Solve systems of equations by graphing
2. Solve systems of equations by substitution
3. Solve systems of equations by elimination
4. Determine the number of solutions
5. Interpret systems of equations dealing with practical situations

II. Expressions and Operations
A. Use algebraic manipulatives to model products and quotients of polynomials
B. Multiply polynomials by monomials and binomials by binomials symbolically
C. Find the quotient of polynomials using a monomial divisor
D. Use the distributive property to "factor out" all common monomial factors
E. Factor second-degree polynomials and binomials with leading coefficient less than four
F. Identify polynomials that cannot be factored over the set of real numbers
G. Use the x-intercept from the graphical representation of the polynomials to determine and confirm its factors

III. Equations and Inequalities
A. Solve quadratic equations algebraically and graphically
B. Verify algebraic solutions using the graphing calculator (x-intercepts)

Fourth Nine Weeks

IV. SOL Test Preparation
V. SOL Testing
VI. Triangles and the Pythagorean Theorem
A. Classify triangles
B. Solve problems involving sides and angles of triangles
C. Use the Pythagorean Theorem

VII. Radical Expressions
A. Simplify rational square roots
B. Identify irrational numbers
C. Simplify square roots
D. Solve radical equations

VIII. Distance and Midpoint
A. Use the Pythagorean Theorem to find the distance between points
B. Use the distance and midpoint formulas

IX. Rational Numbers
A. Graph integers on a number line
B. Add and subtract numbers on a number line
C. Find the absolute value of a number
D. Compare numbers
E. Add, subtract, multiply, and divide rational numbers

X. Similar Triangles
   A. Identify similar triangles
   B. Use proportions and properties of similar triangle to solve practical problems

Algebra IB (Middle School)
Outline of Topics
First Nine Weeks
I. Review Algebra IA
   A. Solve multi-step linear equations and inequalities in one variable
   B. Solve literal equations
   C. Justify the steps used in simplifying expressions and solving equations and inequalities
II. Equations and Inequalities
   A. Graph linear equations and inequalities in two variables
   B. Apply transformations defined by changes in the slope and y-intercept
   C. Express linear functions in slope-intercept form
   D. Find the slope of a line:
      1. Given an equation in slope intercept form
      2. Given the graph of the line
      3. Given two points on the line
   E. Recognize and describe the slope as a constant rate of change that is positive, negative, zero, or undefined
   F. Compare the slopes of graph of linear functions using the graphing calculator
   G. Recognize the different forms of equations of lines
   H. Write an equation of a line
      1. Given the graph of the line
      2. Given two points on the line
      3. Given the slope and a point on the line
III. Benchmark Assessment
Second Nine Weeks
I. Statistics
   A. Write an equation for the line of best fit
   B. Make predictions using the equation of a line of best fit
II. Systems of Equations
   A. Solve systems of equations by
      1. Graphing
      2. Substitution
      3. Elimination
   B. Determine the number of solutions
   C. Interpret systems of equations dealing with practical situations
III. Expressions and Operations
   A. Use algebraic manipulatives to model products and quotients of polynomials
   B. Multiply polynomials by monomials and binomials by binomials symbolically
   C. Find the quotient of polynomials using a monomial divisor
Third Nine Weeks
I. Expressions and Operations
   A. Use the distributive property to "factor out" all common monomial factors
   B. Factor second-degree polynomials and binomials with leading coefficient less than four
   C. Identify polynomials that cannot be factored over the set of real numbers
   D. Use the x-intercept from the graphical representation of the polynomials to determine and confirm its factors
II. Equations and Inequalities
   A. Solve quadratic equations algebraically and graphically
   B. Verify algebraic solutions using the graphing calculator (x-intercepts)
Fourth Nine Weeks
VI. SOL Test Preparation
VII. SOL Testing
VIII. Triangles and the Pythagorean Theorem
   A. Classify triangles
   B. Solve problems involving sides and angles of triangles
   C. Use the Pythagorean Theorem
IX. Radical Expressions
   E. Simplify rational square roots
   F. Identify irrational numbers
   G. Simplify square roots
   H. Solve radical equations
X. Distance and Midpoint
   C. Use the Pythagorean Theorem to find the distance between points
   D. Use the distance and midpoint formulas
XI. Rational Numbers
XII. Graph integers on a number line
XIII. Add and subtract numbers on a number line
XIV. Find the absolute value of a number
XV. Compare numbers
XVI. Add, subtract, multiply, and divide rational numbers
XVII. Similar Triangles
   C. Identify similar triangles
   D. Use proportions and properties of similar triangle to solve practical problems

Geometry – Middle School
Outline of Topics
First Nine Weeks
I. Review
   A. Basic Terminology

B. Logic

II. Triangles and Logic

A. Construct a logical argument consisting of a set of premises and conclusions (conditional, converse, inverse, and contrapositive)

B. Judge the validity of a logical argument

C. Investigate and identify congruence and similarity relationships between triangles

III. Coordinate Relations and Transformations

A. Reflections, rotations, and translations of pictorial objects

B. Find the distance and midpoint of line segments

C. Find the slope of a line given two points

D. Symmetry of figures, point or line.

IV. Lines and Angles

A. Solve practical problems involving complementary, supplementary, and congruent angles that include vertical angles and angles in a polygon

B. Use the relationships between angles formed by two lines cut by a transversal to determine if two lines are parallel and verify, using algebraic and coordinate methods as well as deductive proofs

C. Perform various constructions involving lines and angles

Second Nine Weeks

I. Triangles and Logic

A. Prove congruence or similarity of two triangles, using algebraic and coordinate methods as well as deductive proofs

B. Apply triangle inequality properties to determine if a triangle exists

Third Nine Weeks

I. Coordinate Relations and Transformations

A. Find the distance and midpoint of line segments

B. Find the slope of a line given two points

C. Symmetry of figures, point or line

II. Triangles and Logic

A. Apply triangle inequality properties to determine if a triangle exists

B. Solve practical problems involving right triangles, using the Pythagorean Theorem, properties of special right triangles, and right triangle trigonometry

III. Polygons and Circles

A. Investigate and identify properties of quadrilaterals

B. Prove that quadrilaterals have specific properties

C. Solve practical problems, using the properties of quadrilaterals

D. Prove the properties of quadrilaterals using deductive reasoning

E. Solve problems involving measures of interior and exterior angles of polygons

F. Make connections to art, construction, and nature using tessellations and tiling

G. Investigate and solve practical problems involving circles, using various properties of angles, lines, and arcs

Fourth Nine Weeks

I. Three-Dimensional Figures

A. Model three dimensional figures from two dimensional drawings, using appropriate properties of three dimensions

B. Make a two dimensional representation of a three dimensional object

C. Models will involve scale drawings, perspective drawings, blueprints, or computer simulations

D. Use formulas for surface area and volume of 3-D objects to solve practical problems

E. Use proportional reasoning to solve practical problems involving similar geometric figures

F. Determine how changes in one dimension of an object affect area and/or volume of the object

II. Algebra Review

III. Vertical Team Lessons

A. Area

B. Volume

C. Slope

D. Speeding Ticket Investigation

MUSIC

Band - Level 2 (Intermediate)

Outline of Topics

I. 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
- C, 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

II. Second Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.

(The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

III. Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these concepts and technical skills.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)
- 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
  - History of Jazz and Jazz Styles to include Altered and "Blues" Jazz
  - Rhythms, Melodic, and Aural Perception
  - Improvisation
  - Performance Etiquette
  - Performance
  - Music Careers and Avocations through Music

IV. Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

Chorus - Level 2 (Intermediate)

Outline of Topics

I. 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

II. Second Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

III. Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

IV. Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

Orchestra – Level 2 (Intermediate)

Outline of Topics

I. 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

II. Second Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

III. Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

IV. Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

Strings – Level 2 (Intermediate)

Outline of Topics

I. 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

II. Second Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

III. Third Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

IV. Fourth Nine Weeks

- Continuation of study of all material presented during the preceding nine weeks with the goal of increased mastery of these skills and concepts.
  (The amount of expansion and reinforcement of concepts and technical skills will be determined by the needs and interests of the students.)

General Music

Outline of Topics

I. First Nine Weeks

- Fundamental Music Elements: Rhythm, Melody, Tone Color, Texture/Harmony, Form
- Multicultural, Interdisciplinary, and Historic Perspectives of Music
- Performance Etiquette
- Performance
- Music Careers and Avocations through Music
  (The amount of expansion and reinforcement of concepts and technical will be determined by the needs and interests of the students.)

Science (Physical Science)

Outline of Topics

Every Nine Weeks

I. Problem Solving/Technology
   A. Chemicals and equipment
   B. International System of Units
      1. Length
      2. Mass
      3. Volume
      4. Density
      5. Temperature
      6. Weight
      7. Force
   C. Metric Conversions
   D. Scientific Instruments
      1. Triple Beam and electronic balances
      2. Thermometers
      3. Metric Rulers
      4. Graduated cylinders
      5. Spring scales
   E. Scientific Notation
   F. Research Skills
   G. Experimental Design
      1. Independent variable

2. Dependent variable
3. Constants
4. Controls
5. Repeated trails

H. Statistical Analysis
1. Central tendency
2. Range
3. Repeated trails
4. Frequency distribution

I. Graphs
1. Scattergrams
2. Line plots
3. Histograms

First Nine Weeks

II. Matter: Physical and Chemical

A. Particle Theory of Matter

B. Classification of Matter
1. Elements
2. Compounds
3. Mixtures
4. Acids
5. Bases
6. Salts

C. Phases of Matter
1. Solids
2. Liquids
3. Gases

D. Characteristics of Matter
1. Physical Properties
2. Chemical Properties

E. Physical Properties
1. Shape
2. Density
3. Solubility
4. Odor
5. Melting point
6. Boiling point
7. Color

F. Chemical Properties
1. Acidity
2. Basicity
3. Combustibility
4. Reactivity

G. Law of Conservation of Matter

H. Physical Changes

I. Temperature
1. Celsius
2. Kelvin
3. Absolute zero

Second Nine Weeks

J. Contributions of Atomic Model Theories
1. Dalton
2. Thomson
3. Rutherford
4. Bohr

K. Modern Model of Atomic Structure

L. Periodic Table of Elements
4. Symbols
5. Atomic numbers
6. Atomic mass
7. Chemical families (groups)
8. Periods

M. Classification of Elements
1. Metals
2. Metalloids
3. Nonmetal

J. Simple Compounds
1. Formulas
2. Nature of bonding

K. Chemical Changes
1. Types of reactions
2. Reactants
3. Products
4. Balanced equations

L. Nuclear Reactions
1. Fusion
2. Fission

Third Nine Weeks

III. Energy, Force, Motion, and Work

A. Principals of Motion
1. Speed
2. Velocity
3. Acceleration
4. Work
5. Force
6. Mechanical advantage
7. Efficiency
8. Power

B. Law of Conservation of Momentum

C. Newton's Laws of Motion
1. First
2. Second
3. Third

D. Applications
1. Simple machines
2. Compound machines
3. Powered vehicles
4. Rockets
5. Restraining devices

E. Forms of Energy
1. Potential energy
2. Kinetic energy
3. Mechanical energy
4. Chemical energy
5. Electrical energy

Fourth Nine Weeks

6. Heat
7. Light
a. Nature
1. Reflection
2. Refraction
3. Diffraction
4. Interference

a. Theories
1. Particle theory
2. Wave theory

a. Applications
1. Electromagnetic spectrum

a. Equipment

1. Mirrors
2. Lenses

8. Sound
   a. Characteristics
      1.Wavelength
      2. Frequency
      3. Amplitude
   b. Movement
      1. Interference
      2. Absorbed
      3. Transmitted
      4. Reflected
   c. Applications
      1. Sonar
2. Radar
3. Ultrasonic used in medicine

IV. Magnetism and Electricity
A. Principles of Electricity
1. Static
2. Current
3. Circuits
   a. Parallel
   b. Series
4. Resistance
5. Conductors
6. Insulators

B. Principles of Magnetism
1. Magnetic fields
2. Electromagnets

C. Applications of Electricity and Magnetism
1. Motors
2. Generators

Biology

Course Syllabus

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

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

Social Studies (Civics and Economics)

Outline of Topics

First Nine Weeks

I. Principles and structure of American Constitutional government
A. Principles of consent of the governed, limited government, rule of law, democracy, and representative government
- Virginia Declaration of Rights
- Declaration of Independence
- Articles of confederation
- Virginia Statute for Religious Freedom
- U.S. Constitution

B. Purpose of the U.S. Constitution

II. Rights and Responsibilities of American Citizenship
A. How an individual becomes a citizen
B. First Amendment freedoms
C. Duties of citizenship
D. Responsibilities of citizenship
E. Civic duties and the public good
F. Civic participation and character traits

Second Nine Weeks

I. Rights and Responsibilities of American Citizenship
A. Civic participation and character traits

II. Political Processes
A. Functions of political parties
B. Similarities and differences of political parties
C. Political campaigns and role of media
D. Campaign contributions and costs
E. Voter registration and participation
F. Role of the Electoral College

III. Principles and structure of American constitutional Government
A. Relationship of state governments to the national government
B. Structure and powers of local, state, and national governments
C. Separation of powers and checks and balances
D. Amending the U.S. Constitution

E. Lawmaking process
F. Roles and powers of the executive branch

Third Nine Weeks

I. Principles and structure of American constitutional government

A. Lawmaking process
B. Roles and powers of the executive branch
C. Impact of the media on public opinion and public policy
D. Influences of individuals and interest groups on public policy
E. Organization and jurisdiction of federal and state courts
F. Judicial review
G. Court proceedings in civil and criminal cases
H. Due process protections

II. United States Economy

A. Types of business organizations
B. Consumers, businesses, and circular flow
C. Saving and investing
D. Relationship of Virginia and the U.S. to the global economy
E. Competition in the marketplace
F. Public goods and services

III. Role of the government in the United States'economy

A. Taxation, spending, and borrowing
B. Federal Reserve System
C. Protection of consumer rights and property rights
D. Career opportunities, skills, education, and technological changes

Fourth Nine Weeks

Review for SOL Test